AMERICAN AGRICULTURIST

FOR THE

FARM · GARDEN · & · HOUSEHOLD

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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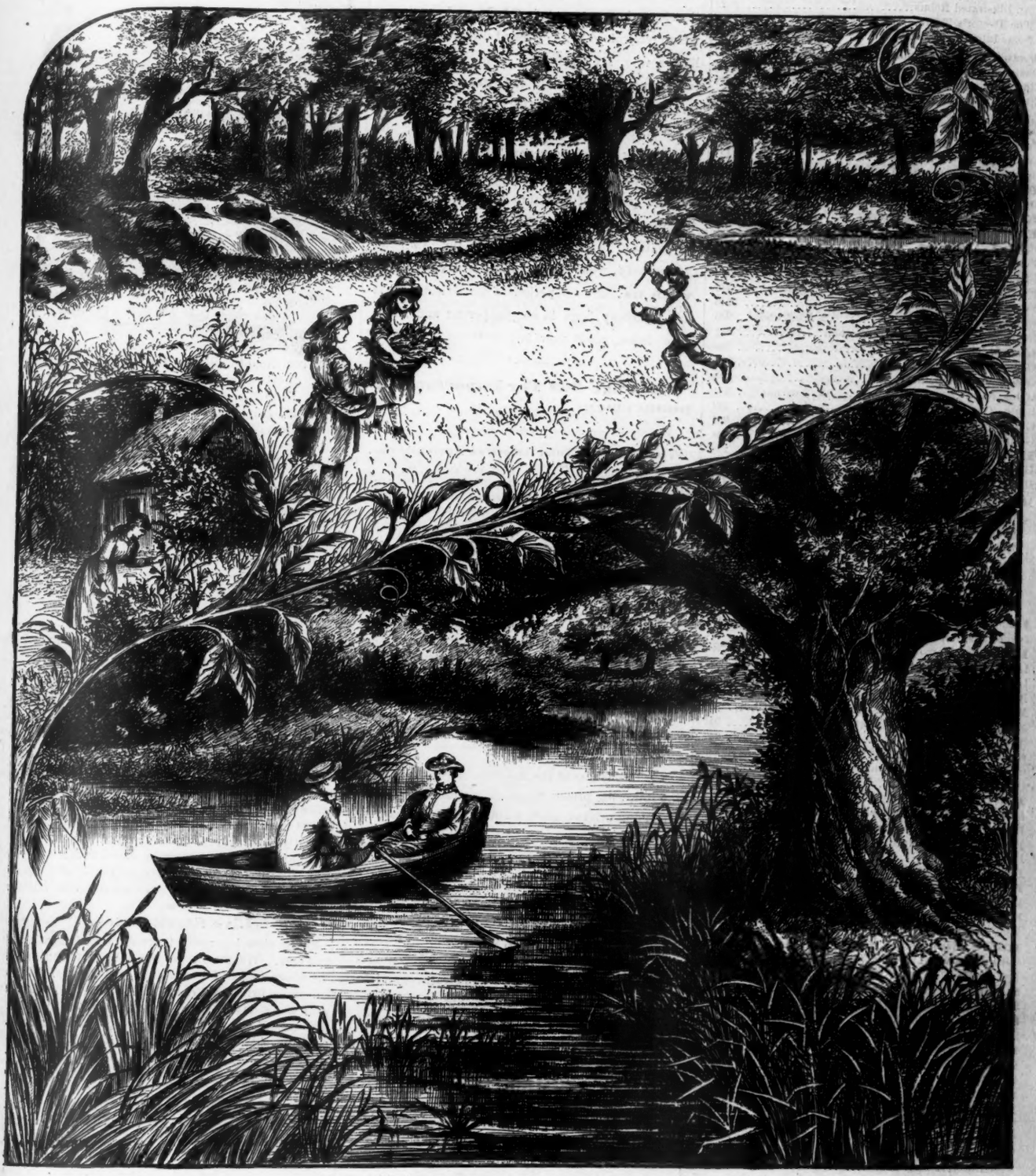

JUNE DAYS.

Drawn and Engraved for the American Agriculturist.

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June Greeting.

With this number, the *American Agriculturist* completes the first half of its forty-third year. Over 3,000 congratulatory letters from subscribers within a few weeks afford most gratifying assurances that the steady improvements in this Journal are everywhere recognized. The present owners and publishers who, six years ago, assumed control and management, have freed the *American Agriculturist* from *all* ENCUMBRANCES, and, equipped with brains and means as never before, unhesitatingly promise a paper better and stronger with each succeeding issue. Dr. Geo. Thurber, for nearly a quarter of a century the Editor, and **all** the able Associates and Writers who have rendered material assistance in making the *American Agriculturist* what it is to-day — **are still with us.** At no period of its existence has this Company been in so prosperous and stable a condition, as it now is.

See Page 269 For Important Announcement.

Writers for the June American Agriculturist.

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Geo. Folsom, Pa.
Rev. Wm. Clift, Conn.
W. B. Jones, Ga.
David W. Judd, N. Y.

Prizes for Short Stories.

The Publishers of the *American Agriculturist* offer the following prizes for short, instructive, and entertaining original stories suited to the BOYS AND GIRLS' COLUMNS.

FIRST PRIZE **$50.00**
SECOND PRIZE **$30.00**
THIRD PRIZE **$15.00**

The stories are to be plainly written in black ink on one side of white paper, and should not exceed three thousand words. Sketches may accompany the story whenever they will add clearness and interest to the text. The stories are to be sent to the Editors of the *American Agriculturist* on or before September 1, 1884. The real name accompanying the story should be placed in a sealed envelope, bearing the assumed name of the writer upon its face. All stories submitted for the above prizes become the property of the *American Agriculturist*. A committee of three competent persons will act as judges and make the awards.

This offer is open to both young and old, and any person may compete for all the prizes. There is no limit to the range of subjects, and the stories may be either real or imaginary, or a combination of the two.

The best time to kill weeds is when they are very small. Most of this work should be done by horse labor. Keep the cultivator running through the corn field, using the hand hoe only close to the hills. Much of the cost of tillage should be charged to the succeeding crops, otherwise figures will often show that it does not pay to grow corn, or any hoed crop. Sow a quantity of fodder corn to supply an abundance of wholesome food when the pastures get short. Sow in drills three feet apart, and at weekly intervals, that there may be a long and continuous supply. A field from which winter rye has been removed, may be manured, plowed, and sown to fodder corn.

Sow Swedish turnips now in drills two and a half feet apart. Use at least two pounds of seed per acre. It is essential to have the soil rich and mellow. When the second leaf appears, thin the plants to about fifteen inches in the rows.

Haying begins this month, and every implement should be in readiness for this pushing work. Cut only as much grass as can be well cared for, otherwise the quality of the hay will be injured by exposure. The hay tedder, next to the mowing machine, is the most valuable haying implement. It hastens the curing, and makes the hay of uniformly good quality. Hay caps made of stout cotton are excellent to protect hay while in the cock. They often pay for themselves in a single season, and if properly cared for, will last for several years.

Buckwheat may be sown in June, and is a good crop for new land. It may profitably fill up a place where some other grain crop has failed.

Live Stock Notes.

Sheep shearing needs to be done with kindness and care. We have seen the skin badly cut, and the shorn animal ill-treated in other ways. Hold the sheep firmly, yet comfortably. The sale of the wool depends somewhat upon the manner in which it is rolled and tied. Each fleece should make a package that can be handled without falling to pieces. Wool tables, or boxes for securely doing up fleeces, have been figured and described in the *American Agriculturist* from time to time. Immediately after shearing the ticks leave the shorn sheep, and gather in the longer wool of the lambs. The young stock thus infested, should be dipped in a decoction of tobacco water, or in one of the mixtures made for the purpose, and sold in the markets. June butter is considered the best made during the year, and therefore the cows now should be yielding an abundant flow of rich milk. Among the essentials of good butter making, are a plenty of wholesome food and pure water, with

clean management of the milk and cream in every way, from the milking, until the butter is packed for market. Calves that are to become milch cows, need a quiet place by themselves, and regular rations of milk and meal. They should be gently handled, and taught to lead with halter. Pigs for the early market need a good run in a pasture—clover is best, and a daily supply of bran and meal slops. The proper place for pigs is in the orchard, where they may feed upon the wormy fruit that falls, and thus destroy vast numbers of injurious insects. Rats, owls, skunks, and hawks, are natural enemies to the young chickens, and to keep them away the yards must be watched by day, and closed coops provided for the night time. The garden may be rid of many insect pests by allowing the young chicks to run among the growing crops.

Orchard and Fruit Garden.

Indications point to an abundant fruit year, though the peach crop may be injured by late frosts, or a long cold rain while the trees are in blossom, may diminish the "set" of apples and pears. These disasters are likely to be local. In years of abundance, while common and poor fruit hardly pays its carriage to market, really fine fruit brings about the usual price. It is in such years that the grower, by care in producing fine specimens, and packing them in an attractive manner, finds fruit-growing profitable, while his indifferent neighbor declares that "fruit don't pay." To produce fine specimens, the number borne by the tree must be reduced; this might have been done in the winter by pruning, but now the orchardist must rely upon thinning the fruit. If we give a single specimen the nourishment that would have been divided between three and four, the result will be seen in the extra size and beauty of the one thus favored. In no fruit is there such a difference in price between the common and extra, as in the peach, and it is a well established fact, that with peaches thinning pays. It will also pay with pears, and especially early apples, to the production of which fruit-growers should give more attention.

Strawberries.—See that the pickers do not mix over-ripe berries with those to be sent to market. While the berries at the top of the basket may be turned to show the best side, the fruit should be the same all through.

Currants, when nearly full-grown, in some markets, bring a higher price than when ripe. If green currants are marketed, thin the crop so that that which is left to ripen, may be benefited.

Gooseberries are generally sold green. Look out for the worm on both these and currants, and use White Hellebore, a tablespoonful of the powder in a pailful of water. Apply with a syringe or garden engine.

Tents which the insects pitch in the heads of trees, should be removed early in the morning. The hand, with, or without a glove, is the best implement yet invented.

Grape-vines.—Tie up the young shoots. Pinch out the ends, leaving two or three leaves beyond the last bunch. Each shoot usually bears three clusters. If these are reduced to two, or even one, the fruit will be all the finer. The rose-bug is very destructive to the grape—shake it off in early morning, and catch in a pan in which is a little kerosene.

Kitchen and Market Garden.

Weeds are the important crop just now. If they have been allowed to get a foot-hold, cultivators, hoes and other implements must be set at work. If a long, sharp-toothed rake is frequently used between the rows, or wherever there is a bare surface, it will destroy the weeds while they are young, and save much labor—use the rake.

Sowing for Succession is often neglected in private gardens; the season for each vegetable may be prolonged by successive sowings. Beans, peas, corn, beets, etc., etc., may well be sown weekly.

Lima Beans.—If the first planting failed, try again.

Asparagus.—Stop cutting as soon as peas are ready and let the tops grow.

Cabbage and Cauliflower.—Seedlings for the late crop should be thinned, to get strong plants.

Cucumbers for pickles do best when the soil is well warmed—the middle or last of the month is soon enough.

Squashes.—Plant the winter sorts in highly manured rows, made ten feet apart, dropping a dozen seeds every four feet, ultimately thinning out the plants to two. As soon as the plants appear, dust them heavily with plaster, or a mixture of plaster and ashes, and if rains wash it off, repeat it, until the plants are strong enough to resist insects.

Rhubarb.—Keep the flower stalks cut away as they appear.

Sweet Potatoes may be planted during this month, according to directions given elsewhere.

Tomatoes.—Continue to tie to the trellis. Cut away all the badly-formed fruit, and look out for "the worm," which may be detected by its droppings on the ground below.

Items.—Thin freely, especially with root-crops. One well-grown carrot, salsify, etc., is worth more than three or four starved, spindling roots....Provide a seed-bed of sage, thyme and other "seasonable" herbs, from which to draw plants to occupy ground cleared of other crops....If celery plants get large, cut off the tops to make them stocky.... Store sashes, straw-mats, and similar appliances under cover. Especially use the rake freely to destroy young weeds in the garden.

Greenhouse and Window Garden.

It is generally desirable to remove the plants from the windows, but those in the green-house, as a rule, can be better cared for by shading and watering, than if they are taken outside. Plants in pots set outside for the summer, should have partial shade. Set the pots on coal ashes, to keep the worms from entering. The roots are often much injured if the sun falls upon the pots; this may be prevented by setting a board on edge to shade them. Many fuchsias and cactuses bloom only in summer; the best place for these is on the veranda. Hanging baskets are best watered by plunging them in a pail or tub of water, until the earth is well soaked through. Boxes upon the outside of the windows should not be allowed to get dry. Unless the surface of the soil is all covered by the plants, it is well to cover it with moss, such as is found at the bases of trees in the woods. All repairs to the green-houses or the heating apparatus, should be made during summer, and the earlier the better.

The Clover Crop.

Red Clover (*Trifolium pratense*) is the most valuable of all forage plants, but is not suited to wet land. When cut in full blossom and well cured, it is excellent feed for work horses, but if badly cured, dusty, and unripe, it should never be fed to them.

As a renovator for the soil, there is no crop equal to clover. It makes the best food for cattle and sheep, and their young, including colts, and will add greatly to the value of the manure-pile. Clover is the easiest to start, and more certain of producing a crop than any grass. There need never be any failure, if the ground is properly prepared, and the young plants are not choked out by an overshadowing and exhaustive crop of grain. A large variety of clover is best where enriching the land is a main object in growing the crop, as it will afford more stalks and a larger amount of vegetation to decay. It does not make hay of as good quality as the medium or smaller varieties, being so much coarser, and on strong land it is liable to fall and become matted, so that cutting it with either scythe or machine is difficult. The smaller varieties will produce two crops of hay of superior quality in one season. The Alsike or Swedish clover (*Trifolium hybridum*) is a variety between the Red (*T. pratense*), and the White (*T. repens*), with scarlet blossoms, and will ripen its seed and renew itself if allowed to do so. It has no merit over the red clover as a forage plant.

The Flower Garden and Lawn.

The rule to mow the lawn once a week should not be followed blindly. In a dry time, when grass grows but little, mowing should be suspended. Be governed by the condition of the grass. As shrubs and herbaceous perennial plants pass out of flower, cut away the faded clusters, unless it is desirable to save seeds, when a few may be left for that purpose. Roses have many enemies; the slug may be treated with White Hellebore, and the rose-bug may be shaken off and caught, while torpid in early morning. When the leaves of hyacinths and other spring bulbs begin to fade, lift the bulbs, and when dried, store in a cool dry place for fall planting. Continue to transplant annuals, and to set out summer bulbs, such as gladioluses, tuberoses, etc. Give stakes to dahlias, and all other plants that need support. Ornamental beds, or ribbon lines, need attention to keep the kinds distinctly marked. Cut back the plants that trespass on their neighbors. Sow annuals for succession. Do not forget the "Everlastings," always so much in demand for Christmas and other winter decorations.

Bones on the Farm.

It is well enough known that bone, when ground fine, makes one of the best and cheapest manures, especially on lands long in use. The needs of farmers with abundant capital are well enough met in the commercial fertilizers. With the Experiment Stations to analyze the samples, there is not much danger of adulteration. The high price of this comminuted bone, two cents a pound and upward, deters many farmers from using it on a large scale, even where there is no doubt that the investment would pay. In a limited way, the small farmer has the means within his reach, of reducing several barrels of bone to a fine powder every year. A solution of potash will reduce bone to a fine condition, and make it available for plant food. Most farmers still use wood for fuel, and the ashes from the fifteen or twenty cords used in a year, if saved, would reduce all the bones ordinarily within reach of the farmer. The old-fashioned leach that used to stand at almost every farmer's back door for soap making, was a good contrivance for reducing the bones. But any tight, strong cask or box, will answer quite as well for this purpose. Water poured upon the ashes makes a lye, or solution of potash, strong enough to decompose the bones. The casks should stand under cover, so that the quantity of water applied to the bone and ashes, may be under control. The time it will take to reduce the bone to a powder, will depend upon the amount of potash in the ashes, and attention bestowed upon the process. It is essential that the ashes and bone should be closely packed in the mass, and that they be kept in a moist state, adding water as it evaporates from the surface. The finer the bone before it is packed in the ashes, the sooner will it be reduced. The process can be hastened by putting into the mass a few pounds of common potash. But this is only necessary to save time. Ashes from hickory, or any of the hard woods, contain sufficient potash to decompose the bone. When the mass is soft enough to break down with a spade or shovel, it can be mixed with land plaster, dried peat, or loam, to make it convenient for handling. It is a concentrated fertilizer, to be used with discretion in the hill, or applied as a top-dressing to growing crops in the garden or field. We are quite sure that any one who uses this preparation of bone and wood ashes, and sees the vigorous push it gives to garden and other crops, will be likely to continue it. But many farmers near seaports and railroad stations, use coal mainly for fuel, and will have to resort to a hand or horse-mill to use up the waste bones. Small mills are extensively used by poultry men, for crushing oyster shells as well as bone, and the machinery can be adjusted to break the bone coarsely for hen feed. The oil and gelatine of the bones have an alimentary value, and, turned into eggs, pay much better than when used as a fertilizer for the soil.

Treatment of Scab in Sheep.

HENRY STEWART.

The prevalent disease everywhere known as scab, is at times troublesome to western sheep men, whose flocks run on the range, and the universal tick is here, as elsewhere, a great annoyance. As a remedy for these pests, it is usual to dip the sheep. A system of yards and pens is laid out for the easy handling of the sheep, and these all lead to a point where a dipping vat is provided, to which are annexed, boilers for heating the dipping fluid, and draining pens for collecting the dripping from the dipped sheep. A plan of the yards and pens is shown in figure 1, and another, which may be more suitable in some cases, in figure 2. The former plan is laid out as follows: The large yard, marked 1, tapers gradually to a lane, 2, guarded by a gate, 3, which swings either way to turn the sheep into the pens 4, or 5, as may be desired. This plan is devised so as to be made available at shearing time, when the sheep are turned into the pen 5, which has a boarded floor, that it may be swept and keep the sheep clean, and from which they may be taken into the shearing yard or shed marked 6. This arrangement thus serves both purposes, and every ranche where more than a thousand head are kept, should be provided with something of this kind. It is always best to dip the sheep immediately after shearing, as the dip then has more effect upon the skin; but a dipping should have been given two weeks previously, to cleanse the wool from the mites, which would otherwise infest the yards and pens, and make them a constant source of infection. The yard, 4, is intended for the lambs, which are thus spared a good deal of injurious crowding among the sheep. From pen 5, pens 7 and 8 are filled, and as the sheep are crowded to the narrow part of the pen, a man takes one by one and drops them into the vat 9. Each sheep is completely immersed in the dip, and is guided by a shepherd by means of a crook, back and forth, so as to force it to remain until the wool is saturated with the medicated fluid. When the sheep has been guided up to the bar 10, it is pushed completely under the surface, and under the bar, where it reaches a sloping barred floor, 11, up which it passes on to the draining floor, 12. The work thus proceeds until this floor is filled, when the sheep are passed into the next one, 13. The floors of these pens slope a little, so as to carry the drip from the wool back into the vats, and prevent waste. The temperature of the liquid in the vats is kept up by means of a supply in a boiler near by, from which hot liquor is dipped as it may be required. When pen 13 is filled, the sheep are then dry, and are turned loose through the gate into the open ground. The pens on either side of the lane 2, are intended for lambs which are able to escape through the bars of the fence. The other plan, figure 2, consists of two circular fences, the space enclosed between them being divided into pens by cross fences and gates. The entrance gate, A, opens from a long tapering lane, into which the sheep can easily be driven from a large enclosure outside. It opens towards *B*. The gate *C*, being open, the yards are filled in succession, the central one and the first one being last filled. At *V* are boilers and store vats, *S*, filled with hot liquid to supply the vat *D*. All being in readiness, four sheep are put into the decoy pens, *P, P;* these have wire fences so that they are plainly seen by the other sheep. The first pen is then opened and the sheep run towards the decoys, where they stand on a drop or tilting stage, made between the decoy pens. This stage holds ten to twelve sheep, and they are thus plunged into the dip and completely immersed. They are guided to the sloping floor at the other end of the vat, from which they are turned into the draining yards, each of which is filled alternately, thus giving ample time for the sheep to dry, before they are turned out. This is necessary, as the sheep have lambs at this time, and the dip is not very agreeable to the lambs. When both yards are filled, the first one is emptied and immediately filled again, while the sheep in the other are draining. The dip consists of an infusion of tobacco, mixed with sulphur.

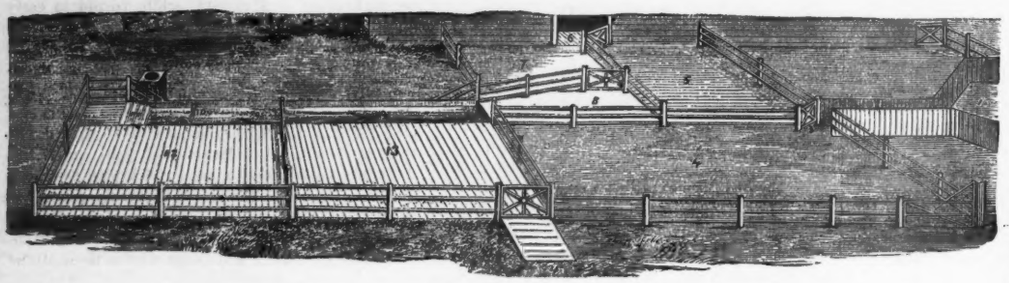

Fig. 1.—YARDS AND PENS FOR DIPPING LARGE NUMBERS OF SHEEP.

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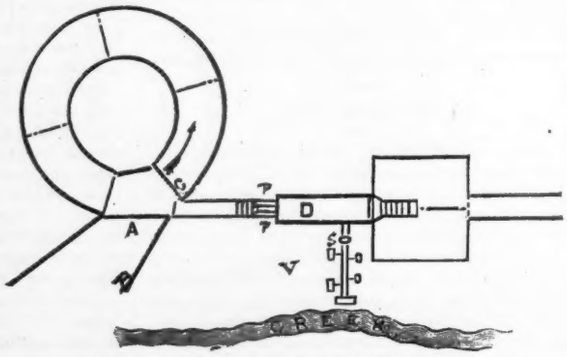


Fig. 2.—A SECOND METHOD OF SHEEP DIPPING.

The Cost of Crops.—Keep Accounts.

Not one farmer in five hundred keeps books of accounts. No other class of men with the same amount of capital conducts business at such loose ends, and is one of the modern wonders that farmers do not all become bankrupt. It shows how sure and safe farming is, for we should expect nothing less than failure on the part of the merchant or banker who kept no accounts. Without accounts, the farmer can know but little about his business. He can not tell what a single crop costs or what he realizes for it, which crop pays and which does not, what class of farm-stock is to him profitable or otherwise, or what field has brought in more than has been expended upon it.

He does not keep accounts, because he thinks the work too difficult, but it is not necessary for the farmer to be an expert accountant. If possessed of only average intelligence, a fair supply of good common sense, a blank book and a pencil, he can do all that is essential. The transactions of each day can be set down at night in a few minutes. Among the leading advantages of book-keeping is an accurate knowledge of the cost of each crop. When sold as harvested, the amount to be credited to a crop is easily determined. When fed to stock, or with its nature otherwise changed, a correct account of its value may be kept by reckoning it at the market price at the time.

A crop should be charged with the following items: Plowing of the land; preparing land for seed; fertilizers; value of seed; cost of seeding; after cultivation, if any; harvesting; marketing; interest on value of land occupied, or rent; tax, unless rent includes tax; interest on stock, machinery, implements, etc.; repairs, and wear and tear on implements, machinery, etc.; insurance. The items will vary slightly with each crop. All labor should be estimated at what it costs, or what it would cost if laborers were hired. The value of seed and land, tax, rent, interest on land, implements, buildings, etc., and many other items may be definitely computed. Some items must be estimated approximately, but a substantial degree of accuracy may be attained. A farmer can make a pretty close estimate of the number of acres a plow usually turns before it wears out. Dividing the cost of the plow now in use by this number of acres, will give in cents the wear and tear of a plow per acre. Multiplying this by the number of acres in each case will determine the amount to be charged in this item against each particular crop. In the same way the wear and tear of other implements can be determined. The work may be made to include this item. Thus, the farmer may get three dollars per day for every day he plows for others. Then multiplying the number of days employed in plowing for a certain crop by three dollars, will include in the product labor, interest on implement and stock, wear and tear of same, etc. For so much per acre, the man with a self-binder will cut and bind your wheat. This again will include several items in the cost of harvesting.

Wear and tear of land and value of fertilizers must be approximated, and are both considered together. The cost of fertilizers is a matter of certainty, but the amount to be charged against the crop to which they are applied is not, for it will not appropriate all of them. If the fertility of the land is maintained by the use of fertilizers, nothing for wear and tear of land should be held against the crop, for it is charged with the cost of the fertilizers. It is apparent that the amount to be charged in this item each farmer must determine for himself, for it will depend upon the character and quantity of the fertilizer, whether it has been applied to that crop, or the preceding one. Yet, with a little thought, the farmer can estimate these very correctly. If part of the crop is reduced to manure, the value of this should be credited to it.

Encourage the Birds.

War is being waged by farmers against all birds, except a few popular songsters, and most boys are taught that birds and birds' nests are their rightful prey. These little creatures do some damage it must be admitted. They will pick up seed that has not been well covered, but that ought to teach the farmer to sow his seeds more carefully. They will feast upon the ripe grain, and sometimes destroy more than they eat; but the farmer seldom considers that he might not have had any grain to harvest, were it not for these same feathered intruders. During the time between sowing and harvesting, birds must live upon something besides grain, and I fancy that farmers seldom think that that something is principally insects, and the eggs of insects. They rear their young on these, and one can hardly estimate the immense number of insects thus destroyed. Were it not for this safeguard that nature has kindly furnished us in the form of the feathered race, the world would, according to the best calculations, be completely overrun in a few years of uninterrupted propagation, with crawling, stinging pests. Birds have an important work to do, and

we should aid them with all the means at our command; certainly we cannot afford to destroy our protectors. Every farmer should teach his children to cherish and protect their feathered friends. Encourage the birds, and children too, by building bird-houses about the farm buildings. Teach the boys to build these houses, and thus serve two purposes at once—accustoming them to the use of tools, and imbuing their minds with humane sentiments. Many a farm home knows naught of music, but that which floats on the air from nature's own orchestra. Let us have all the sweet sounds we can, to soften and lighten our rural toils. W. D. BOYNTON.

Farm Gates.

Farmers lose enough time letting down and putting up bars to pay their taxes, if profitably expended. I would have many gates upon the farm. They are inexpensive, convenient, and should be wherever there will be any use for them. When I see a farm well supplied with gates, I know that man is progressive and making money, for he values time, and wisely seeks to save it.

In these days of self-binders the gate-ways should be at least fourteen feet wide. I have found the best material for a gate to be pine boards, and seasoned white oak for end pieces. All the wood used in the construction of the gate should be well seasoned. It is best to plane all the wood-work, though this is not absolutely necessary. Cover each tenon with thick paint before it is placed in its mortise. The gate itself should be painted. Have everything fit tightly. Fasten the brace to the cross-pieces with small bolts or wrought nails well clinched. Mortise the ends of the cross-pieces into the end posts, and secure them in place with wooden pins wedged at both ends, or iron bolts. The best cross-pieces are made of pine fencing-boards six inches wide; the end pieces should be four by seven-inch scantling, although the one at the latch may be lighter. Five cross-pieces are enough. The lighter the gate in proportion to strength, the better it is. There is but one right way to brace a gate, and many wrong ones. The object of bracing is to strengthen the gate, and also to prevent its sagging. Gates sag in two ways; by the moving to one side of the posts upon which the gates are hung, and the settling of the gates themselves. Unless braced, the only thing to hold the gate square is the perfect rigidity of the tenons in the mortises; but the weight of the gate will loosen these and allow the end of the gate opposite the hinges to sag. It is plain that a brace placed like that shown in fig. 1 will not prevent this settling down. The only opposition it can give is the resistance of the nails; and these will draw loose in the holes as readily as the tenons in the mortises. A brace set as shown in fig. 2 is not much better,

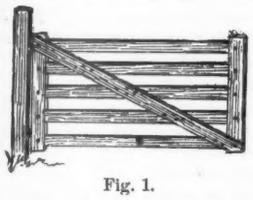


Fig. 1.

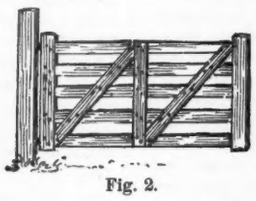


Fig. 2.

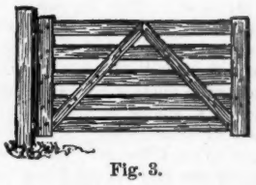


Fig. 3.

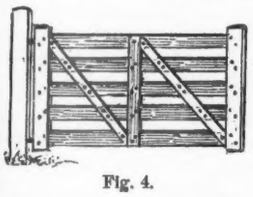


Fig. 4.

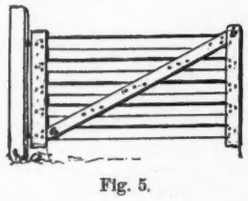


Fig. 5.

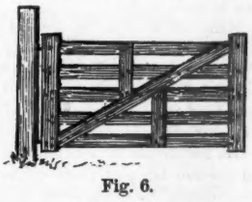


Fig. 6.

as the resistance must depend upon the rigidity of the upright piece in the middle, and the nails or bolts holding it will give way enough to allow the gate to sag. The method shown in fig. 3 is fully as faulty, while the form shown in fig. 4 is even worse. It seems strange that any one should brace a gate in these ways, but I have quite frequently seen it attempted. The only right way to brace a gate is shown in fig. 5. The gate may be further strengthened as shown in fig. 6. Before the gate can sag, the brace must be shortened; for as the gate settles, the points *a* and *b* must come closer together, and this the brace effectually prevents.

The posts should be set in such a way that they will not be pulled to one side and allow the gate to sag. The post must be put below the line of frost, or else it will be heaved out of position; I would say that three feet in the ground was none too deep. Have a large post and make a big hole for it. Be careful to set the post plumb, and stamp the earth firmly in the hole—it can not be stamped too hard. While stamping, keep walking around the post so that the earth will be firmed on all sides. Blocks may be arranged as shown in fig. 7; but I do not consider this necessary when the post has been rightly set, although it may be advisable to take this further precaution.

To remove the pulling weight of the gate when closed, the swinging end may rest upon a block; or a pin inserted in the end piece of the gate may rest in a slot sawed in the post, or on a shoulder of the post. Fig. 8 shows one end of a combination of two plans—the iron rod from near the top of the high post holds the gate, while the strain upon the post is lessened by the opposite end of the closed gate being supported on the other post.

For hanging the gate I have found the best hinges to be those shown in fig. 9. One part passes through the end-piece of the gate, and is secured by a nut on the end. The other piece is heated and driven into the post, following the path of a small auger-hole. Next to this I rank the strap hinge, which should be fastened with bolts or screws. Three easy, cheap ways of supporting the gate are shown in figs. 10, 11 and 12. In fig. 10 a stout band of wood, or one of iron, may be used in place of the chain. And in place of the stool for the reception of the lower end of the end-piece, a block resting on the ground, or a shoulder on the post, may be substituted. The mode shown in fig. 11 is common in the West. Its construction needs no explanation. By sliding the gate back until it almost balances, it may be carried around with ease. In fig. 12 the fastening, or latch, must be so arranged as to hold the lower part of the gate in position. The box of stones renders it easier to move the gate. A heavy block of wood serves the same purpose. JOHN M. STAHL.

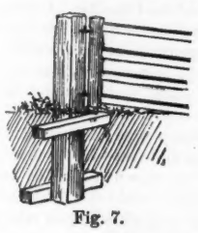


Fig. 7.

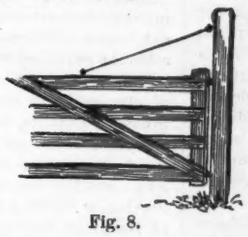


Fig. 8.

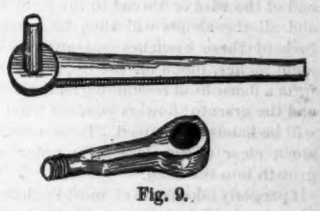


Fig. 9.

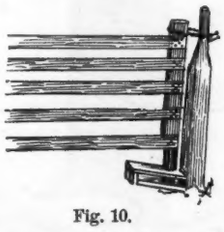


Fig. 10.

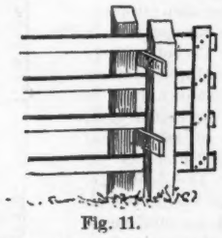


Fig. 11.

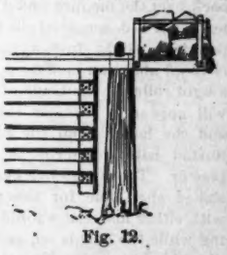


Fig. 12.

Prolong the Milking Season of Cows.

It is well known that there is much difference in the length of time cows continue in milk in the same herd, and with the same treatment. Some cows give milk but seven months, while others continue nine or ten months. This difference is mainly a matter of breed and of training during the first season of the heifer's milking. The Jerseys and their grades are generally better fed and run easily from the start, into a long milking season, not infrequently up to the time of calving, where this is desired. But in any breed the season may be prolonged by the care of the heifer with her first calf, and during the first milking season. She should be kept in good condition all through the months of pregnancy, and, if practicable, drop her calf in the fall, when the barns are full and there is an abundant store of milk-producing food. With good hay, and regular rations of roots and meal, and kind treatment, the habit of giving milk through the winter may be thoroughly established. In a family cow this habit adds much to her value.

Fuchsias—Training and Management.

JAMES SHEEHAN, GENEVA, N. Y.

We confess to have a special liking for the Fuchsias, and think no assortment of house plants is complete without one or two varieties of these beautiful flowers. They are easily propagated, either from cuttings or by layers, and the amount of bloom one strong, healthy plant is capable of producing under favorable circumstances, is truly wonderful. Upon one plant of *Fuchsia speciosa* started from a cutting of a single eye in March, we counted at one time in the December following, one hundred and fifty perfect blossoms. The plant stood in an eight-inch pot, and measured four feet in hight. Some kinds do better as house plants than others. Among the best are *F. speciosa*, *F. fulgens*, and the Rose of Castile; and I would particularly recommend these sorts as superior to all others for the window garden. The right kind of soil has everything to do with success in growing fine Fuchsias; it should be of a light, peaty quality, with one-third cow manure, all thoroughly mixed together until well decayed. They also relish an abundance of water while growing, and once or twice a week an application of liquid manure will be beneficial.

While growing, never allow the roots to become pot-bound, but when the roots begin to form a mat on the outside of the ball of earth, it is time to

shift the plant into a pot of the next larger size, and so on as the plant may require it. This is a very important point, and should not be overlooked if strong, healthy plants are expected. Fuchsias are especially desirable for training on trellises. They can be trained over an upright trellis, and have a very pretty effect, but the best form is that of an umbrella. Secure a strong, vigorous plant and allow one shoot to grow upright until about two feet high, then pinch off the top of the shoot. It will branch out and form a head, each shoot of which, when sufficiently long, may have a fine thread or hair-wire attached to the tip, by which to draw it downward; fasten the other end of the wire or thread to the stem of the plant, and all the shoots will then be pendant. When each of these branches has attained a length of eight inches, pinch off the tip, and the whole will form a dense head resembling an umbrella in shape; and the graceful flowers pendant from each shoot will be handsome indeed. Remember to keep the stock clear of side-shoots, in order to throw the growth into the head.

If properly taken care of, most Fuchsias will bloom the year round; but some kinds can be especially recommended for winter blooming; among them are: *F. speciosa*, flesh-colored, with scarlet corolla; *F. serratifolia*, orange, scarlet corolla, greenish sepals; Meteor, deep-red corolla, light-pink sepals. The following are the finest in every respect that the market affords. Mrs. Bennett, pink; Sir Colin Campbell, double-blue; Rose of Castile, single-violet; Elm City, double-scarlet; Carl Holt, crimson; Tower of London, double-blue; Wave of Life, foliage yellow, corolla violet; *F. speciosa*, single, flesh-colored; and *F. fulgens*, long red corolla.

Cucumbers for Pickles.

The pickle crop is a fairly profitable one if there are pickle factories within easy reach. The seed is sown in the first half of the present month. A light, warm, and rich soil is needed. The ground may be marked off, four feet apart each way, and hills made where the marks intersect. A common method is to sow the seeds in drills. The whole field is heavily manured, and the seed sown in drills five feet apart, or furrows are opened, the manure distributed liberally in them and well worked in with the soil. The earth is then thrown back over the manure and the surface rolled. At least half a dozen seeds to the foot are then dropped in a slight furrow made by a marker, and covered about an inch deep, pressing the soil with a light roller or the blade of the hoe. Insect pests will appear as soon as the young plants are up, and the latter, from the first, must be copiously dusted with plaster or a mixture of ashes or plaster. Those who live near the coast prefer air-slaked shell-lime for this purpose. The dusting with either material should be done in early morning while the dew is on, and be kept up until the vines begin to run. The plants should be gradually thinned and finally leave one strong one at every foot in the row. When the vines begin to bear, the cucumbers should be picked daily or every other day, and of the size in demand. A barrel holds about five thousand small cucumbers, and from twelve to fifteen hundred large ones. Always cut the cucumbers, leaving them with a stem.

Rye for Hay.

Mr. "A. G. W.," Manchester, Tenn., writes us: You ask for experience in using rye for hay. I cut it in bloom. The heads even then are sweeter than the straw, and horses will pick it over for the former and waste the latter unless cut. When cut and fed to cows giving milk I find it equal to the best Timothy hay, and with me either makes more milk than clover hay.—Rye is better to seed down with than oats, I believe, otherwise oats would be preferable, as nothing else makes so good hay as oats cut just as the most forward heads are in bloom. I have tried both.—For a sowed crop to make hay Hungarian grass is next to oats.

Improved Hives and Fixtures.

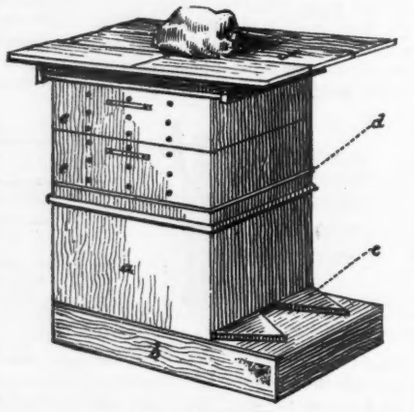
W. Z. HUTCHINSON.

Since its invention, the movable-comb hive has undergone a vast amount of modification. At present, however, the majority of bee-keepers have laid aside the supposed improvements and adopted the original frame, and many of them the original style of hive, as given to the world years ago, by that prince of apiarists, the Rev. L. L. Langstroth. The standard Langstroth's frame is nine and one-eighth inches deep, and seventeen and three-eighth inches long; and the standard hive shown at *a* in the engraving, is simply a box with rabbets on the inside of the upper edges of the end pieces upon which to hang the frame. The space between the frames and the inside of the hive is three-eighths of an inch.

A cheap and excellent stand for hives is simply a shallow box, without top or bottom, made from cheap lumber. It should be the same size as the bottom board of the hive, and four inches is of sufficient hight. Such a stand is shown at *b*.

Many devices have been employed to enlarge or contract the entrance to a hive, but there is nothing more simple and effectual than triangular blocks, as shown at *c*. They are sawed from inch boards, and are large enough to completely close the entrance when placed in front of it. By moving them apart the entrance is opened; while their shape is such as to guide the bees into the entrance, even though it should be nearly closed. When robber bees are troublesome, the entrance may be easily made so small that only a single bee can pass, while during the hight of the honey-harvest the blocks can be entirely removed.

In a previous article it was mentioned that some bee-keepers used queen-excluding honey-boards



A STANDARD HIVE.

between the brood and surplus departments to prevent the queen from entering and depositing eggs in the section boxes. The edge of such a board can be seen at *d*.

Many bee-keepers are discarding wide frames for holding sections, and adopting what is called the "Heddon Case": This is simply a box without top or bottom, one-fourth of an inch deeper than the hight of the sections, with wooden partitions inside between the rows of sections. Two of these cases are shown in position at *e*, *e*, and the position of the wooden partitions will be readily understood by noticing the heads of the nails that hold them in place. To support the sections, a strip of tin, one fourth of an inch wider than the thickness of one of the partitions, is nailed to the lower edge of each partition, and a similar strip to the lower edge of each end piece of the case. The top to the hive, which is simply a board with wide cleats nailed to its ends, is used to cover the cases of sections. Each case contains thirty-two sections, four and a quarter by nine and a quarter inches square, and an inch and a half wide. When the sections in the case, first set upon the hive, are one-half finished, the case is raised and another case of sections placed between this and the hive. When the sections last set on are partly finished, another case is set between them and the hive. When the sections in the upper case are finished, the case is taken off and the sections removed. In brief, the empty sections are put on at the bottom, and the finished ones taken off at the top. This is the "tiering up" plan, the best with which the writer is acquainted.

SHADE FOR HIVES:—To secure the best results, hives should be shaded in the middle of the day during the hot weather. To accomplish this, the writer uses a "shade-board," two by three feet in size, made by nailing the butts of shingles to a strip of board four inches wide and two feet long. This board, which is shown at *f*, is placed upon the hive with one edge even with the north side of the hive, and the other projecting beyond and shading the hive in the middle of the day. This allows the sun to strike the hive in the morning and evening. The board is kept in place by a stone.

Among the Farmers.—NEW SERIES, No. 2.

BY ONE OF THEM.

I have been "knocking about" a good deal among the farmers the past month, and have seen things to make me open my eyes. They have not been by any means closed along back, but one can never see so much when pursuing the even tenor of his daily life, as when "on the go." This time I have been among the so-called

"Gentlemen Farmers,"

men who make, in a measure, farming a pastime, who live in town during the winter, or who having other ways of getting money, spend it upon the farm, with little care whether it pays in money or not. They are paid, no doubt, over and again in pleasure, even if their milk and champagne, if they drink either, cost them the same price. I have often said, that I knew no happier men than those who have a good business whereat to earn their money, and a fine farm to spend it upon.

I would by no means say that "Gentlemen Farmers" do not make farming pay. Many do. Not pure and simple farming perhaps, but farming in their way. A successful merchant ordinarily makes a good farmer. So he is just the man to enjoy a farm. A man who can keep a hundred milch cows, and make butter all winter that sells at fifty-five to sixty cents a pound, or one who can sell his heifer calves at an average of three hundred dollars each, and half his bulls at a third of that, has merchant enough in his make up to be satisfied. There are horse farms that pay; sheep farms that pay; fruit farms that pay; poultry farms that pay very well, and a good many milk farms that pay.

Jersey Tests.

The tide of popular favor is setting so strongly in favor of Jersey cows, and their merits are being so rapidly developed, that it is no wonder that they are the favorites among the people to whom I allude. The Jerseys have been valued and enjoyed for their beauty and for their elegant product—firm and abundant butter, but now the excitement of training them for, and conducting their tests is added. As it requires great care, the taking of no small risks, and very considerable expense withal, it is essential that these tests should be undertaken by rich men, and not by men rich only in houses and lands and fine cattle, but in character, and a reputation for accurate, conscientious honesty, which is worth more even to a poor man than all material wealth.

The reader may wonder why a cow that makes twenty pounds of butter in a week, ought to be the property of a rich man, rather than of a poor one. I will tell them at the risk of letting out a secret. Such a cow, when put to her best butter-making pace, must be fed and handled without the least regard to expense. The question is, first, how

much can she be made to eat? Princess 2d "beat the record" as a feeder, as well as a yielder in a week's test. She ate one hundred and forty-two pounds, all told, of clover hay, roots, bran, oats, Indian and oil-meal daily, in order to make her twenty-seven pounds and odd ounces of marketable butter. She cost her owner four thousand eight hundred dollars, and as such cows are selling now, was worth at the beginning of the test, at least six thousand dollars. As a race-horse is often disabled in a race, or in training for one, such a test is too often fatal to the cow from the after effects. In this case, by the mistaken kindness of a visitor to the stable, who fed Princess some apples, she nearly died during a sharp attack of colic. These risks must be taken—guarded against if possible—but the results involve the hazard. In regard to this cow, her wonderful constitution, and recuperative power, is shown by the fact that the very day of the colic, she gave three pounds of butter against four and a fraction on preceding and subsequent days. Mercedes, the so-called Holstein cow, that made that wonderful test last summer, is dead, doubtless from indiscrete handling after her test. So is Nancy Lee, a famous Jersey cow.

It is fair to say, their owners sustain a loss of hardly less than ten thousand dollars each, and it is to guard against such results that these cows must be surrounded with every appliance in the stable and out of it, that can promote their health and comfort, while their attendants must be men of great discretion and trustworthiness—fearless feeders, but of good judgment. Such men are hard to find, and when found are worth good wages, and get them. Men in charge of such cows, must have their employers' interests so sincerely at heart, as to be practically incorruptible, for there is no telling what temptations may be presented to them. It is unsafe for a dishonest man to have anything to do with the test of a great cow for butter; he is liable to deceive even himself, as well as his employer and the public. Such a man is quickly found out as a rule, so that on the whole, I think there is reason to place full faith in the astonishing tests which are now from time reported. There is not one of them so far, which has not received and borne well, the severest scrutiny.

Sweet Stables.

I saw Mary Anne, of St. Lambert, a few weeks ago, as it happened, the very day of the completion of the three hundred and ten days, during which she has made eight hundred and thirty-eight pounds eleven and a quarter ounces of marketable butter, and she and her kindred certainly stand in the sweetest cow stable I ever was in. It is made so, I think, by the daily application of air-slaked lime to the floors and passage-ways, in front of, and behind the cows, forming a complete coating to those parts of the stable, not unlike thick white-wash. The floors of the stalls, and the gutters behind them, are not thus treated. Just enough dust arises from this application, to purify the air, while it is otherwise imperceptible, except when the floor is swept, or fresh lime scattered on. It seems to be an excellent plan. No damage comes to the manure, for scarcely any lime comes in contact with it.

When visiting the farms of Messrs. Burnham and McCready, famous for the cows of the Coomassie family of Jerseys, I saw a barn very well altered over. An old barn with its big floor open to the ridge pole, and rows of stalls on one or both sides, is a cold place for fine cows in full milk, during our severe winters. In fact, cows will not stay in full milk long, no matter how well fed in such a place. What is needed is warmth and ventilation. Mr. McCready secured this by boarding up the sides of the hay bays, and putting a ceiling over the floor, allowing plenty of room for a load of hay to be driven in. In this ceiling are three doors that will slide over one another, to give ventilation, and may be easily lifted off when getting in hay. The space which they cover is large enough to give plenty of room to unload, and the result, with double siding, was a most comfortable cow barn, fit for twenty-pound Jerseys. The cows were very hard to beat, and have kept up their flow of milk and yield of butter, as if it had been warm weather.

The Narrow-Leaved Laurel—Lamb-kill.

In January last (page 22) we gave a description of a plant so poisonous to calves, that in some localities it is known as "Kill-calf." Some of our correspondents have confounded that shrub (*Leucothoë racemosa*), with another, which has long been known as poisonous to sheep, and properly called Lamb-kill, and Sheep Laurel. By comparing the engraving given in January, with the one here presented, the differences between the two shrubs will be seen at a glance. The Lamb-kill is *Kalmia angustifolia*, and belongs to the same genus with the showy Mountain Laurel (*K. latifolia*), but is a much smaller shrub, rarely growing over two feet high. It has a wide range, being common on hill-

THE LAMB-KILL (*Kalmia angustifolia*).

sides, and in rocky pastures, from Canada to the Carolinas. Its long, narrow leaves are opposite, or in threes, whitish on the lower surface, and pale-green above; the flowers are light-crimson or purplish, and of about the size shown in the engraving. The experiments of Doct. Thomas F. Wood, of North Carolina, given in the *American Agriculturist* in January, 1883, show that the plant is decidedly poisonous to sheep, but the animal with which he experimented would not eat it voluntarily. His observations were made in autumn, when the conditions are quite different from those in spring, the time sheep are usually poisoned. After having had only dry food all winter, they are attracted by the evergreen leaves of the plant, often the only green thing to be seen, and at that time eat enough to poison them, though they may avoid them later, when green food is abundant. Warm milk and molasses given in sufficient quantities to cause vomiting, is the usual remedy. This Laurel is suspected of yielding poisonous honey; this is a point that bee-keepers should investigate. It seems to be well established that the honey of some related plants produces narcotic effects, and if that afforded by this species is also poisonous, it will furnish another reason for destroying it.

The Sportsman in Camp.

ROBERT BARNWELL ROOSEVELT.

A stove is a convenient thing to have, but not an easy one to carry, if it is not too heavy and does not occupy too much room it is sure to be too dirty after it has once been used. A makeshift can be extemporized wherever flat stones can be had, and will be found infinitely preferable to the ordinary open fire. All that the traveller will have to carry with him, will be two lengths of common stove-pipe, the rest is built at the camping ground, and can be erected in so short a time that the trouble of moving house will not be serious. Having selected the flat stones, lay them up in the shape of a horse-shoe, the sides being about three feet long, and about nine inches apart inside, that is, the fire place will be nine inches wide, or more if desirable. At the further end, the bend of the horse-shoe, the pipe is inserted; it can be held in place by wires to neighboring trees, and a stone placed on top will serve as a damper. All chinks between the stones have to be well filled with clay or mud, or earth banked up against the outside, or what is better yet, the entire affair can be lowered by having a place dug for it. Large flat stones must then be laid over the top and the work is done. One trial will make any person an adept in building it, and it will be found a luxury, that to appreciate, needs only to be tried. This stove can be erected within the tent, if the trench is dug to the outside and covered with boards, and if there is a hole in the top for the escape of smoke; instead of stones sheet-iron may be used for the stove cover.

The angler will often on his lucky days take more fish than he can turn to account, but which he will probably find use for before his trip is over. These can be salted, and of a morning nothing is better than a salted lake trout or blue-fish. Those who have only eaten cod and mackerel, do not know what a salt fish is. Split them, and cut off the head and tail and take out the back bones, bones do no special harm, and are excellent things to buy at twenty cents a pound for the good of trade, but when you are doing your own curing it is as well to leave them out, or keep a separate place for them. Pack the fish, cut to a proper size, in a half barrel or pail, flesh side down, so that whatever of dirt may be in the salt will not get into them, but will remain on the skin. Upon each layer of fish, lay a thin layer of salt, rock salt will answer, or common table salt can be used. Proceed in this way until the fish are all in, or the receptacle is filled, taking care to put enough salt on top to prevent its melting off when it turns to brine and leaving the fish bare so that they will spoil. That is the only risk in the operation; put down in this manner, they will keep in the hottest weather for weeks.

Where the sportsmen intend to remain in one place, the most convenient way of living will be to put up a regular house, either purchased ready to set up with a few bolts, or built by the party out of boards taken for the purpose, if any one is sufficiently skilled in carpentry to direct. Doors and windows are a luxury, although the open tent is considered by some as the more healthy. The "Hoffmire" house, as it is called, is admirably adapted for transportation, and is constructed by persons well acquainted with the necessities of woodsmen. Such extravagances are the exception, not the rule of "summering" in the wilderness, and it is our general fate to be without them. We must sleep in the tent, must cook at the open fire, fight mosquitoes and black flies as well as we can, without nets to keep them out, must endure wet and cold, and learn to rough it and have a good time with the aid of our own resources. Among the principal of these will be a knowledge of some of the simplest rules of the cuisine.

How I Found my Prairie Home.

R. G. NEWTON.

I cannot say positively whether my own inclinations, or the advice of that kind-hearted old philosopher, long since gone to his home beyond the western skies, caused me in the winter of 188–, to dispose of my home and immovables, and come West. Living in one of the pleasantest villages of Southern New York, with a good little home all paid for, a good trade, and plenty of work, you

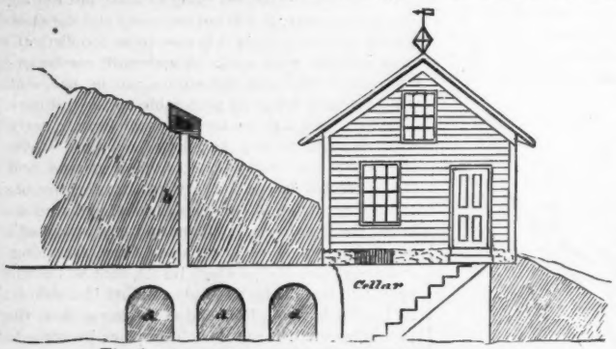


Fig. 1.—A PRAIRIE HOUSE WITH HILLSIDE CELLAR.

may ask why I left all this to come out on the prairies. I had worked fifteen years in the dust and noise of a large planing mill, and all I had to show for it was that house and lot, which was bought at the time real estate was booming. My wife and I had denied ourselves many pleasures to get what we had together, and the prospect for coming years was not a pleasing one. We might be spared to live many years, my wages would give us the necessaries of life, but little or none for the future, when I might not be able to work. In looking around me, I could find many men that old age was crowding out of the ranks, but they had in their best days been as good mechanics as any of us, and among them all but very few (and they were the ones who had come in when the country was new and the town just started), that had saved anything in their years of toil. After many sleepless nights, I made up my mind to do what so many had done before, break off with everything connected with that kind of life, and on the prairies of the great West start anew. I did so, and here we are.

I left New York State in the winter, and went into the Red River Valley of Dakota, where I had a brother in the hotel business. The next question was, where should I locate? I had a good opportunity to see and talk with parties, who had visited many different parts of the Territory. Just then the Devil's Lake country was having a "boom;" there was the Mouse River country, and many other localities open to settlers, but I wanted to build my future home where I could raise a variety of field crops, corn especially, and not live without

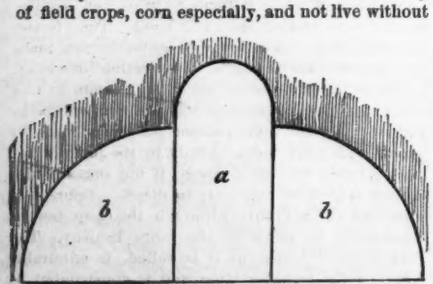


Fig. 2.—CROSS-SECTION OF THE CELLAR.

a garden. I decided to have a look at the country between the Jim River and the Missouri. So in the middle of March, with between two and three feet of snow on the ground, I started. In three days I was in Aberdeen, and passed the last snowbank in the cuts through the hills in Grant County. At Aberdeen I found the "booming" point was on the Missouri River, but as it necessitated a ride of a hundred miles over the prairies (with one stopping place), in an open or lumber wagon, and during March weather, it was not what I wanted. I went to the Huron district, getting what information I could, started on the road towards Pierre, and stopping at St. Lawrence, found a team just starting north with two young men, who were going up there to locate. Joining them, we rode about forty-five miles almost due north, getting to our destination about seven o'clock. After supper, I made arrangements with a "locator" to be on hand early in the morning with a team, and show me some of the unoccupied land near the town, which was just starting. After this I was shown to my sleeping-place, which was half of one end of a bunk, twelve feet long, accommodating four, with one just like it built above. Morning came, and getting up, I counted twenty-three lodgers in that room, about eighteen by twenty feet square. When going down stairs, I had to step over two or three persons who were still snoring, under buffalo robes, coats, and any other covering obtainable. After breakfast came the driver, who took me over several claims; I went back to the hotel, and at nine o'clock, the stage running to the nearest rail road point came up, and off we went. I decided on my way down to enter my filing on the first claim we went over.

I went to Huron Monday, but could not get my filing made out until it was too late to get it in that day, but I was on hand the next morning with many others. I found the piece was not taken, my entry was accepted, and I started again for the North, intending to spend the summer with my

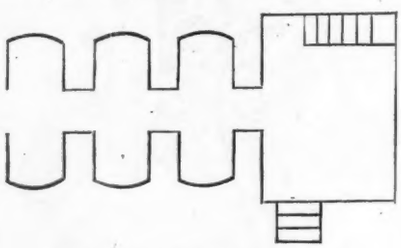


Fig. 3.—FLOOR PLAN OF THE CELLAR.

brother, and come on to my claim in the fall, which, by making a Homestead entry, I was enabled to do.

LOCATING THE HOUSE AND STABLES.

Claim shanties are usually built on the point nearest to the adjoining town, but many other parts of the farm may be much better for building sites. Shelter from the winds, of which those from the north-west are the most prevalent, is very desirable. Locate the house and stables within easy access to water. By digging deep enough, well-water will be reached almost anywhere. If the well is necessarily located some distance from the house, you can erect a wind-mill, lay a few rods of iron pipe and have a steady supply of water at the barn and house.

In Central Dakota the land is sufficiently undulating to afford sometimes a choice of several locations on a quarter section. A rise of the ground of fifteen to twenty-five feet will shut off the heavy winds, and by placing the buildings at the foot or a little way up the rise, and planting the top to evergreens, mixed with other trees, you will not feel the winds at all. The advantages a hillside offers for a cellar are not to be overlooked. By digging down a little way, you can then excavate directly into the hill, making a hall or cutting about four feet wide, and as long as desired. By digging out bins at the side, roots and other crops may be secured from frost. Fig. 1 shows a dwelling, with a cellar dug into a hillside. The side excavations are at *a*, *a*, *a*, and a ventilator, *b*, rises from the main part. Fig. 2 is a cross-section of the underground cellar, *a*, showing the side bins, *b*, *b*. The floor plan of the cellar is given in fig. 3. The hard subsoil makes such a cellar easily constructed, and by leaving a space of solid earth between each bin of two or three feet, you will not require to use a stone in the whole construction. It will require a good, tight door at the entrance of the gallery from the cellar, and it may be necessary to provide for ventilation, which can be done by digging one or more holes from the top of the hill down into the gallery. Cover the ventilating shaft tightly with a large box, not easily overturned. The top should be built to shed the rain, and holes a foot across cut in the sides and covered with wire cloth, to keep out vermin. If the roof extends over the sides considerably, and the holes are close under the roof, but little rain will beat in. This box can be removed, if necessary, after freezing weather sets in, and a board covered over the hole, with some earth thrown on it to keep it in place, but if there is much thickness of earth over the cellar, it may be better to leave the ventilator open. This cannot be done in many parts of Northern Dakota, as the water would fill the cellar the first winter.

Cider-Making Without a Press—Diffusion.

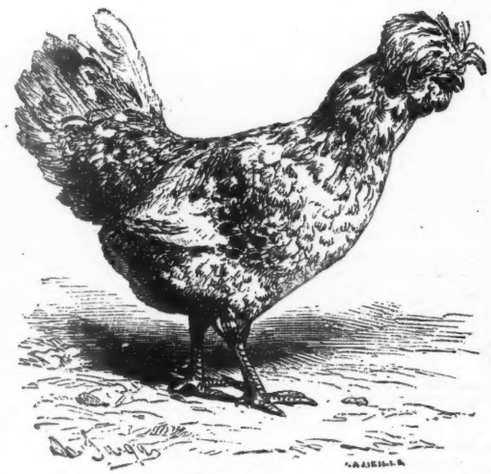
The method of extracting sugar from the beet root by dissolving it out with water, or diffusion, as it is called, has been applied to cider making in some districts of France. As the method is very simple and is practicable on a small scale, some of our readers may wish to make a trial of it. A cask or keg of any convenient size has a false bottom in which are numerous holes, and is raised a few inches above the real bottom. The apples are ground, and packed in the cask on the false bottom, first placing a coarse cloth over it. At the top of the apples is a follower. Water is poured in sufficient to cover the apples, and the whole allowed to stand for twenty-four or thirty-six hours. At the end of the proper time the liquid is drawn off through a spigot in the cask near the bottom. Water is again added, allowed to stand and drawn off; this is repeated once more, making in all, three diffusions. The resulting liquids are mixed together and treated like new cider made in the usual way. If not rich enough sugar may be added. By this method cider may be made without expense for press or mill, as the latter, though convenient, is not necessary, as the apples may be brought to a pulp by pounding them in a barrel or strong tight box. This process leaves the pomace in better condition than that from the press, whether to feed to the pigs or to add to the manure heap.

Salmon Fresh from Oregon.

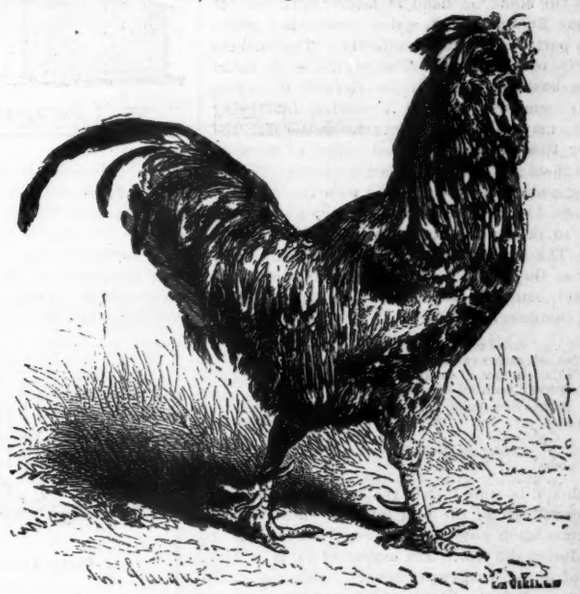
The latest immigrant is the Oregon Salmon. There has been inaugurated the past spring a system of shipping in regular cars, the world-famed salmon of the Columbia River, to the Eastern markets. The "Chinnook" salmon is a stranger at the East; the "steel-heads," that are not considered choice on the Pacific Coast, are the only salmon from the Western States that have reached eastern markets. The "Chinnook" does not commence running until the middle of April. The salmon fisheries of the Columbia River are mammoth enterprises to-day. There are fifty large canneries between Astoria, at the mouth of the Columbia, and the Cascades above Portland. Three average salmon fill four dozen cans, each holding a pound; there are forty-eight cans in a case. When this industry began, in 1866, a case of salmon cost sixteen dollars; to-day, the current price is four dollars. There are two thousand boats, including a dozen steam-tenders, employed in this business alone on the Columbia River. A new impetus will be given to the industry by the new enterprise of shipping the fresh salmon to the Eastern States.

Houdan Fowls.

It is very interesting to see what different styles of fowls the various peoples of the world have produced, no doubt chiefly by selecting those for breeders, which have been for generations regarded as best adapted to their own use or for market. This has doubtless been to some extent influenced by the original stocks which they had to work upon, largely also by climatic influences, but chiefly by the needs, fancy and caprice of the people. Thus the French fowls differ from the English, the Dutch from both; the Spanish and those of the Mediterranean Coast are of a very different type, and so they vary throughout India, China, and Japan. There is often a style and air about the fowls, which reminds one of some type of character among the people, and this is especially true of the French and Spanish fowls.



A HOUDAN HEN.



A HOUDAN COCK.

Engraved for the American Agriculturist.

We select for illustration one of the best known and most useful French breeds, the Houdan (pronounced *hoodon*—the last syllable like *don* in don't). This breed combines three exceedingly useful characteristics. The birds have few if any superiors as table fowls; the eggs are large, white, and abundant, the hens being persistent layers and non-sitters, and the chicks develop very rapidly and are early ready for market as broilers. In point of hardiness and general utility there is difference of opinion, but all agree that they are the hardiest of all the French breeds, both in this country and in England. The idea that they are not hardy comes from the fact, that imported fowls do not acclimate easily if at all, but American bred Houdans appear to be as hardy as any. It is not difficult to get such.

The Houdans are white-skinned fowls, with pinkish or mottled legs, and a useless fifth toe, like the Dorkings. This is no serious objection to them, and is one of the criterions of purity of blood. Our illustrations show the fowls very well. They are above medium size, with black, white, and gray or mixed feathers, evenly but irregularly mingled. They are well formed, full-breasted, have moderate powers of flight, are domestic, but good foragers. They have top-knots of medium size, which do not obscure the sight as do those of the Polish fowls. Their combs are branching, somewhat like the antlers of a stag, and thus help to keep the crest-feathers out of the fowls' eyes.

They will do well with reasonable care in any dry, warm, clean location, and give great satisfaction, being fully equal to the Dorkings for the table, though not so large, and quite as hardy. These fowls, when well fattened by a French poulterer, surpass anything we ever see in our markets. They are drawn, the thighs thrust back beneath the skin, the wings tucked behind the back, and these are bound with bandages (that leave no mark), upon a properly formed board to get cold and ready for shipping or exposing on the market stand. They look worth several cents a pound more than if shipped and exposed for sale in the common New York way, which is the way of the greater part of the country, except New England, where fowls are drawn before marketing.

Poultry Keeping as a Business.

We are constantly in receipt of letters like the one below, from persons who, with a very small capital, seek to better their mode of livelihood, and become more independent. Far be it from us to discourage them, but before undertaking poultry and egg raising as a new business, they should know for certain that they will find it very hard for a time, and may exhaust both themselves and their capital before they get started. Mr. D. J. Quinby, writes from Philadelphia, Pa., as follows:

"I can control about one acre and a half of good grass land in Central New Jersey, with a small barn, dwelling house, and a good well of pure water on it. The land in question slopes to the northwest, and to the south. How many chickens can be raised profitably on an acre and a half of land? Could a person get a moderate living from them, making a business of it? How much money would be required to start a run of dimensions given, including incubators, etc.?—I can raise about three hundred dollars. What stock of fowls do you consider preferable, all things considered?"

In answer to these questions we have to say, first, the profits of poultry raising do not depend so much on raising chickens, as upon the production of eggs. This season is too far advanced to do either this year, but summer or autumn is the proper time to prepare for keeping laying hens, and for a harvest next winter. No one can give an exact answer to your question, but we say in general that thousands of chickens may be raised with proper appliances and care. The matter of profit depends upon so many contingencies, that it is impossible to say whether one hundred or ten thousand could be raised with profit. Second: A thousand laying hens could be kept through the winter on the surface named, and ought to lay thirty eggs each on an average, and these should net the raiser two cents each, which would amount to six thousand dollars. Still though one thousand hens might do very well in winter, keep one another warm, and with care and cleanliness be healthy, yet one hundred and fifty hens would overstock the place in summer. It would be easy enough to raise one thousand chickens, unless they should suffer from some epizootic malady, which might sweep them off by scores. The approved plan is to use very early hatched pullets as layers, and to begin as early as February to kill them off as they stop laying, and to clear the yards before broilers are plenty, and the price of fowls falls very much. Third: As to capital. A good lot of young fowls for winter laying, could hardly be obtained for less than one dollar a head, and those from which one would expect to raise chickens for next year's layers, ought to cost double that. So really the three hundred dollars would not go far, still, if a person has a year or so to get ready in, and can live and work for that time without encroaching on his capital, perhaps a start might be made, even on three hundred dollars. The things to do would be to put up a building for the fowls, light, dry, and warm, half underground perhaps, and well banked up with earth in winter; to secure chickens whenever it is possible. You would have to do your own carpenter work, and then a house for two hundred hens would cost you fifty dollars. A winter house for that number of hens, need not be more than twelve by twenty-five feet on the ground, and high enough for a man to stand up in. In close quarters they keep one another warm, and lay better. Fourth: The best fowls for eggs, all things considered, are Leghorns. Probably the best for general purposes are Plymouth Rocks.

The Eatable Podded Peas.

W. B. Jones, Henderson, Ga., writes us with reference to the eatable podded peas, figured and described in April last, that a variety of them has been cultivated in his vicinity for eighty or a hundred years. Besides the names given in the article referred to, it is with him called "salad pea," and "snap pea." Mr. J. gives a method of cultivating these and other peas, avoiding the trouble and expense of "bushing," which will be useful to many others in the Southern States. The peas are sown along the rows of cotton stalks of the growth of the previous year. In the latter part of December, or in January or February, the soil is plowed away from the stalks, running close to them; the manure is distributed in the furrow, and the earth turned back over it. In the bed thus formed, the peas are drilled in, a row on each side of the stalks, and as near them as practicable. The stalks are strong enough to bear the pea vines until the crop is mature. Mr. Jones says that they have their first picking about April 10th, and that the pod is very brittle, snapping off short like a German Wax-bean. The peas are used when young as a salad, and when sufficiently mature, are shelled like ordinary peas. When the crop is allowed to ripen, the stalks and vines are pulled up, and removed to a shelter.

The Creamery and the Farmer.

PROF. S. B. THOMPSON, NEB. AGRICULTURAL COLLEGE.

Among the various ways of diversifying production on the farm, the creamery has many advantages. It yields quick returns. Many creameries pay cash every month. A farmer who lacks capital to stock his farm and must wait for the natural increase to give him his return, may, by investing in cows, get a return in a few months. He thus, in a measure, gets the advantage of the "nimble sixpence." The results are more certain than in most other lines of farming. Good butter is always in demand for cash. The product being sold as fast as made, the risk of a falling market with a full stock on hand is largely removed. If extreme fluctuations in price come, they affect only a part of the year's production. The business is fairly remunerative. The profits, as is usual with a business in which the element of risk is largely removed, are not excessive, but being steady, may in the long run be better for the farmer than a more speculative line of work in which there is a promise of larger profits. In presenting some points connected with the question of profit, I cannot do better than give a statement made to me by Mr. S. C. Bassett, of Buffalo Co., Neb. The figures are taken from his books, and so far as they are an estimate, it is that of an intelligent, cautious, and trustworthy farmer. This is the summary for 1883:

No. of cows milked	12
No. of calves raised	12
No. of inches of cream	2271
Average number of inches per cow	189¼
1291 inches of cream, @ 16 cts	$206.56
980 " " " @ 20 cts.	196.00
Total received for cream	$402.56
Per cow	$33.54

It should be stated, that the cows were well fed and cared for in the best manner. Besides hay and grass, each cow was fed sixty-five bushels of corn during the year. The estimated value of the food of one cow was as follows: Pasture in summer, two dollars; hay in winter, three dollars; sixty-five bushels of corn at twenty cents, thirteen dollars. Total, eighteen dollars.

The other sources of income from the cow, besides the cream were the skim-milk and the calf. Mr. Bassett estimates that the skim-milk judiciously fed, would produce or be worth eighteen dollars, and the calf at three days old would bring five dollars. The skim-milk, properly utilized, will therefore pay the cost of feeding the cow, leaving the value of the cream sold, thirty-three dollars and fifty-four cents, and the calf five dollars, or a total of thirty-eight dollars and fifty-four cents, to pay for interest, cost of labor, and net profit.

This it seems ought to be on the whole a satisfactory showing. A farmer who in addition to his other farming operations keeps ten or twelve cows, is able to count on a cash income monthly of something over thirty dollars at the lowest estimate. Farmers who have the requisite skill to make good butter, and who also live near large towns, can often do still better than this, by engaging their product to regular customers, and delivering it as needed. But where there is one farmer who can do this to advantage, there are two or three who could sell cream to a creamery with much greater profit. It would seem that a well managed creamery ought to be of great advantage to any rural community, and the rapid extension of the creamery system throughout the West confirms this view.

It is a great mistake to suppose that any kind of management will produce such results as are indicated above. The following are some of the essential conditions of success in the business of furnishing cream to a creamery: The cows must be liberally fed; valuable production comes from abundant food. There must be the greatest regularity in feeding, watering, and milking the cows. The cows must be good ones. These cannot always be bought, and the successful dairyman should raise his own cows as fast and as far as possible. He can thus be in a position to select the best to keep, and sell the others. The whole business must be under the immediate direction and care of the owner, or of some painstaking person who has a pecuniary interest in the returns from the dairy. It will rarely be possible to have the work done successfully by hired help alone.

A Small Poultry House.

Mr. L. E. DeGour, Morristown, Pa., sends us sketches and description of a small poultry house,

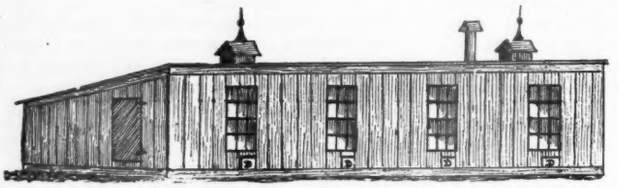


Fig. 1.—EXTERIOR OF A SMALL POULTRY HOUSE.

from which the accompanying engravings are made. The house is ten by thirty feet, seven feet high in front, and five feet at the rear. The boards are "common thirds," with lath placed over the cracks. The roof is tin, with two ventilators. The yard for the young chicks has a board floor, to keep them from the damp earth. This house will accommodate seventy-five birds. The materials cost about fifty-three dollars. Mr. DeGour, though

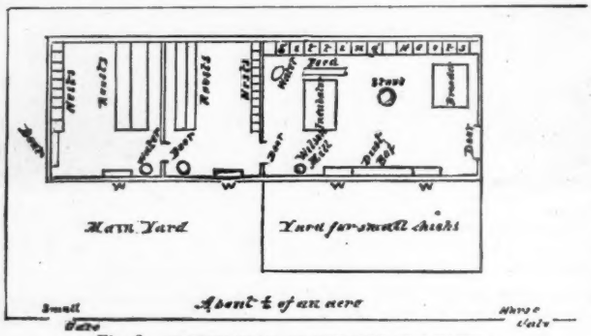


Fig. 2.—GROUND PLAN OF THE POULTRY HOUSE.

not a carpenter, built the structure, and is sure any one at all accustomed to the use of carpenter tools, can do the same from the accompanying plan.

Dairy Questions.

Messrs. Waltz & Wæner, of Montana Ter., ask us several questions on dairy matters. Our answers to some of them will indicate the questions. It takes a little over eight "pounds of milk to make a gallon," and about two gallons of good "milk to make a pound of butter." Yet it will require three or even four gallons of some milk for a pound of butter. It will not pay to make butter, except for your own use, even at sixty cents a pound, if you can sell the milk at twenty-five cents a gallon, unless indeed you have a sale for sweet skim-milk in some form, at eight to twelve cents a gallon. Jersey cows are generally below medium size, and are no fighters. They would be underlings in a herd of "common ranch cows." They will yield on an average eight or ten quarts of milk a day for six to eight months, and during this time ought to average a pound to a pound and a quarter of butter a day. The "amount of butter made from noted cows," has in some cases exceeded three pounds a day, week after week. It is a very good one that yields fourteen pounds a week. Jersey cows fit to ship, would cost you in the East two hundred and fifty to three hundred dollars each, in carload lots. Orange carrots are better than white, because they help to keep up the color of the butter in winter, and are nearly as productive. Carrots and mangels mixed make excellent food for cows in winter, especially if well sprinkled after slicing with equal parts by weight of bran and corn meal.

Forest Commissions and Agriculture.

The outcome of the protracted discussion in the New York Legislature on the Adirondack question, is a bill which, at this writing, has passed the Senate, and we hope will pass the Assembly. It provides for three Commissioners, to be appointed by the Governor with the advice of the Senate, to hold office respectively two, four, and six years, thus creating a vacancy every two years. They are to take charge of the forest lands now belonging to the State, and of any that may hereafter be acquired; to prevent damage to them by fire, trespass, etc., and to report to the Legislature each year on or before Jan. 15 of their doings, together with such information "as may be useful in preserving the forests upon State lands, and maintaining the supply of water derived therefrom for the use of the State." The bill does not, it will be noticed, provide for an Adirondack Reservation, as did several of those which came up in the early part of the session; but simply for a Commission to care for the forest lands, and for the waters which flow from them.

The main feature in the bill, which makes it desirable to have it passed, is in the clause providing for a report. The annual value of our forest products, according to the last census, was seven hundred million dollars—more than ten times the value of all the gold and silver produced, and more than three times that of the entire mineral output, precious metals, iron, and coal. This enormous total is merely the value of the raw material, and not that of the manufactured articles made out of it, and therefore the lack of forest products means stoppage of these vast industries, all of which create a market for farm produce, and furnish articles needed for farm use. When we remember that we are rapidly nearing the exhaustion of the greater part of our available supply of forest products, we see that farmers have a very direct interest in forest preservation. S. W. POWELL.

Short Timber and Wood Supply.

The terrible devastation by the floods in the Valley of the Ohio, the last winter and spring, is a text from which many of our papers are preaching sermons on the waste of our woodlands, and prophesying greater evils in the future. The case is by no means as desperate as the pessimists would have us believe. New England is among the oldest settled portions of the country, and in this section the danger is already passed, if it ever existed, and intelligent observers assure us that there is more woodland to-day, than there was fifty years ago. More than a quarter of the land is in wood. The white pine, one of our most valuable timber trees, may not be so plenty or as large as in the olden time, but it still exists, and furnishes large quantities of lumber, as the shoe trade of Eastern Massachusetts attests. Timber land cleared and left to renew its growth, is ready to clear again in twenty-five or thirty years. And so far as the holding of snow and rain is concerned, it is about as valuable as the original forest. The shade is complete, the leaves and leaf-mould are retained, and floods are no more numerous or destructive than they were in the early settlement of the country. There are two forces steadily operating to conserve our forests, for the most part overlooked by those who prophesy evil from our waning forests. The first is the enormous and steady increase of the production of coal, and the increase of facilities for its distribu-

tion. Steamboats, locomotives, and factories, that once used wood, now use coal almost exclusively. Even farmers within one or two miles of a railroad depot, now use coal and find it cheaper than wood, especially in winter, though the wood grows upon their own farms. And this use of coal is increasing in the rural districts every year, and nothing is likely to prevent its increase in the future. Then the drift of our population away from the rural districts into cities and villages, has an important bearing upon the increase of woodland. The census shows that in the last decade, the exclusively farming towns of Connecticut lost over twelve thousand inhabitants, while there was a steady increase in the cities and villages. This drift is not likely to be arrested by any songs the poets can sing. It means abandoned farms, lone chimney-stacks where farm houses once stood, rocky pastures and meadows turned into thrifty forests. These are a good investment to their present owners, as woodland, the annual growth paying interest and taxes, without outlay for labor. Self-interest is likely to conserve our forests with or without floods. This drift of the population in due time will reach the newer States.

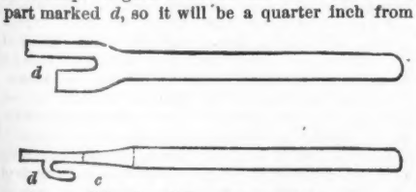
Hanging Nest Boxes.

It is cheaper to construct continuous rows of nest boxes, nailing them securely to the sides of the poultry houses, but they afford a snug retreat for lice, mites, and other insect enemies of fowls, from which it is difficult to dislodge them. By having movable boxes the cleansing process is facilitated, and extreme neatness can be maintained. A good box that is easily made should be from twelve to fourteen inches long, eight to ten inches wide and about eight inches deep, the part by which it hangs being about four or five inches higher. The ends may be made of inch white pine and the front, back, and bottom of half-inch pine, all planed stuff to give a neat finish. A good coat of paint will add to the appearance and go far towards preventing vermin from infesting it, otherwise apply whitewash, inside and out, before using. To prevent the back from being broken, securely fasten two inch and a half cleats on the outside. Make two holes, through which the stout screws pass when the box is in place.

A very readily made hanging box is made as follows: The back and bottom are constructed of good, planed inch pine, the hight of back being twelve to fourteen inches. The front of the box is made of the sides of a high cheese box, the width (extreme) from back to front being from eight to ten inches. To prevent the front from coming loose where it is fastened to the sides, it should be nailed on with a strip of tin or heavy leather. D. Z. E.

A Wire Splicer.

Mr. A. F. Kemman, New Hampton, Iowa, sends us a description with sketches of his wire splicer. This is an age of wire, as is evident from the net work of wires in the cities, and the millions of miles of barbed wire in fences in the country. To make this splicer, take a bar of half inch, round iron, nine inches long. Heat about three inches of one end and hammer it flat until it is one inch wide. With a cold chisel cut a one-fourth inch slot a quarter of an inch from the right side and an inch deep. Figure 1 shows the slot. Bend the part marked *d*, so it will be a quarter inch from



Figs. 1 and 2.—THE SPLICER.

the flat part, as shown in figure 2 at *c* and *d*. The lower part of the slot *c* should be about a half inch from the bend at *d*. Smooth the parts with a file, thus completing the tool. To use it let *e* and *f*, figure 3, represent two wires to be joined. Bend the ends so they are nearly at right angles with each other. Hold them with pinchers at *g*; place

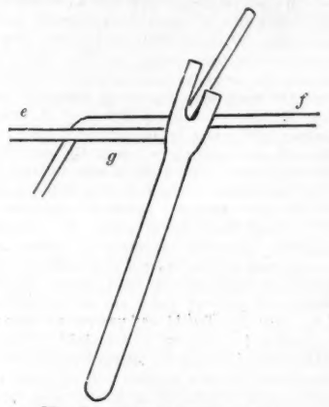


Fig. 3.—MAKING THE SPLICE.

the hook of the splicer on the wire *f*, while the wire *e* falls in the slot. Twist the pieces around the wire *f* when one half of the splice is made. Repeat the operation for the other end. Figure 4 represents the splice completed. Use about four or five inches of each wire to twist around the

Fig. 4.—THE SPLICE COMPLETE.

other. This makes a neat, easily made splice for either plain or barbed wire. The splicer is so simple that any blacksmith can quickly make it at very little cost.

Convenient Portable Tool Box.

An old dry goods or shoe box will supply materials, and a little rainy day or evening work will construct a good tool box, very convenient not only for keeping the tools in, but also for carrying them out to the field, for repairing fences, etc. For lightness, use half inch boards for the sides and bottom, and those a little thicker for the ends and handle. The box may be of any size. The following dimensions will admit hand-saws, axes or adz: End pieces eight inches wide, sixteen inches high, tapering from six inches above the bottom to two inches at top. Side pieces six inches wide, thirty-four inches long. Bottom piece six by thirty-two inches. Top piece, or handle, straight-grained pine or spruce, or ash if available, corners rounded. The handle may be nailed in, or fitted to small auger holes and tenoned. Adapt the dimensions to the tools; a common method is, a side compartment, one and a half by thirty-two inches for saw and square; nail-boxes at the ends, with a partition in one of them for an axe blade, the handle to lie along one side. Central portion for hammer, chisels, augers, etc. For a neat job, plane all, and fasten with finishing nails. In such a box the load is balanced; it is easily carried by one man, or between two, each taking hold of one end of the handle. A. F. K.

Shoulder Pads.

Mr. H. C. Blackwood, Washougal, W. T., writes us as follows: I have found a collar-pad made of new, undressed sheep-skin, to be the best preventive of and remedy for sore shoulders in horses. Cut out two pieces about the shape of, and somewhat larger than the faces of the collar. Fasten one edge in the groove opposite the hame groove, with the wool next to the collar. The skin seems to have some healing properties. This pad is quickly and easily made, and is much better than most of the pads sold by the harness makers. One set will last an entire season. I have used these pads a great deal in threshing, which work is very liable to gall the shoulders of horses, and have found them superior to all other kinds.

Sweet Potatoes in Northern Gardens.

Within a few years, the cultivation of the sweet potato has extended northward, and it is now raised successfully as far north as Central Michigan. Those who wish to undertake its culture on a small scale, will find it cheaper to buy the plants, or sets, than to raise them. In cities the seedsmen offer the plants, and there are several who advertise them. They bear transportation well, and may be sent by mail or express. In Northern localities it is best to raise them on manured ridges. Upon the unbroken surface of the soil distribute well decomposed barn-yard manure in lines, or strips, three feet apart, the manure strips being about a foot wide and three inches thick. With a plow, turn a furrow from both sides, to cover the manure and form a ridge over it. Dress up the ridges with hoe and rake, and plant the potato sets upon the top of it every fifteen inches. If the planting is done in a dry time, make the holes with a trowel, fill them with water, and when this soaks away, set in the plant. If the soil is fairly moist, watering will not be needed. The plants should be set deep in the soil, leaving but one or two leaves above the surface. Should a late frost or an accident destroy the portion above ground, some of the eyes below will start and replace it. The sides of the ridges and the spaces between them should be kept clear of weeds until the growth of the vines covers them. The variety most generally grown at the North is the Nansemond, though there are one or two others for which greater earliness is claimed. When the vines get large, they will throw out roots at each joint; this should be prevented by moving them, by running a rake-handle or some such stick under the vines and lifting them from the earth.

A Convenient Tree-Lifter.

A large percentage of trees transplanted from the forest, die on account of not having a sufficien quantity of roots. The engraving shows a contrivance to aid in lifting trees in good condition. Join at the top two pieces of two by four scantling, four feet long, and nail a cross-piece about six inches from the bottom. Attach a piece of chain, *e*, to one end of a lever, *c*, which is notched at *b*, so as to work on the pieces *d*. To use the lifter, take a crow-bar and punch a hole under the root of the tree to be dug, pull the chain through, and hook it around to form a loop. Cloth or old rags may be

A DEVICE FOR LIFTING TREES.

placed in the loop, to prevent injury to the tree. Cut a circle, *f*, around the tree with a sharp spade. Then let one person pull on the lever *c*, while the other digs. Trees may be very quickly lifted in this manner, and without straining a person as when pulling by hand. The contrivance may be carried by one person. When a large quantity is to be dug, a boy may be sent ahead to make the holes for the chain. JNO. BARTLETT.

A Fence Board Holder.

Figure 1 shows a contrivance for holding fence boards against the posts, at the right distances apart when nailing. A two and a half by two and a half inch piece of the desired length is taken for the upright, *a*. About its center is hinged the brace, *c*. A strap hinge, *b*, or a stout piece of leather for a hinge, will answer. Blocks or stops, *d*,*d*,*d*,*d*, are nailed on the upright *a*, at the required distances, according to the space between the boards on the fence. The bottom boards of the fence are nailed on first. The bottom block of the board holder rests upon the bottom board, and is held in position by the brace *c*. The boards can be placed in the holder like putting up bars, and are guided to their places on the posts by the blocks *d*, *d*. The boards can now be nailed on the posts, and the holding devices moved for another length. When the boards are too long, they can be pulled forward a little, and the end sawed, and pushed back to place. One man using this contrivance, can nail on nearly as many boards in a day, as two persons with one to hold the boards in the old way. Figure 2 shows the manner of using the fence board holders.

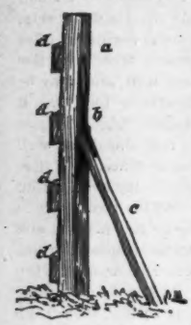


Fig. 1.

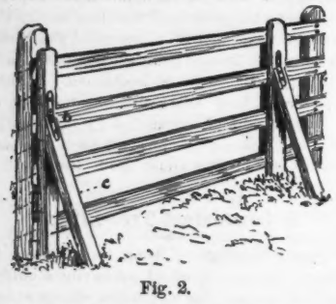


Fig. 2.

Animal Ailments.

DR. D. D. SLADE.

SHORTENING OF THE TENDONS.—Mr. A. N. Brainard, Carbondale, Ills.—The shortening of the tendons, or cords in the legs of the horse, is due to previous inflammation in the parts, the result of strain and over-exertion.—In the early stages, a long period of rest at pasture with an occasional blistering, may serve to restore the tissues to their natural condition, if they have not been too seriously injured. A high-heeled shoe may facilitate the cure, by throwing the tendons into a state of relaxation. After the tendons have become permanently and rigidly shortened, however, only the severing of the cords by the knife, can give any hope of a permanent cure. The operation should be performed by a skillful surgeon, and the animal cannot be put to hard work for several weeks afterwards. Although the operation is a simple one, its results are often far from satisfactory, and this fact must be considered before it is undertaken. There is always a tendency to contraction of the tendons again, in spite of the means employed to overcome this condition.

PARTURITION FEVER. MILK FEVER. PARTURIENT APOPLEXY.—Mr. W. L. Fulton, Pioneer, Ohio.—These names are given to a diseased condition, which may attack cows within twenty-four hours after calving, and almost invariably proves fatal. The disease most frequently shows itself in animals that are large milkers, and are inclined to a fullness of blood, and that have been well fed previous to calving. The symptoms may be, at first, great dullness, stupor, heat of head and horns, followed by delirium, or the delirium may be absent, and loss of power over the limbs, accompanied by paralysis of intestines and bladder, and inability to rise. Whatever may be the particular condition of the animal as shown by the symptoms, it is dependent upon the peculiar state of the system at the time of parturition. Cows, which show a tendency to plethora, must be kept upon a low diet for weeks before calving. The diet should be of a laxative nature. Great attention should be paid to cleanliness, and to proper ventilation of the premises in which they are kept. Particular care should be taken, that they are not allowed to have access to luxuriant pasturage. The disease having declared itself, the first and most important step is to administer a full cathartic, which should consist of two pounds, at least, of Epsom salts. If insensibility has occurred, give this by means of the stomach pump, and after a few hours the action of the purgative may be assisted and hastened by foments of warm soap-suds every fifteen to twenty minutes. If there is delirium with heat of head and horns, apply cold water, or bits of ice to these parts. Rub the body and extremities constantly, and draw off the milk frequently. The strength must be kept up by the aid of stimulants. The following answers an excellent purpose: Aromatic Spirits of Ammonia, two ounces; Ground Gentian, one ounce; Ale, one pint, to be given every two hours. Coldness of surface and of extremities must be counteracted by suitable coverings. It is important to maintain the erect posture, if possible. The chances of recovery under any circumstances are small, but this fact should not prevent us from using every exertion to overcome this malady. If recovery occurs, the animal should be fattened for the butcher, and not allowed to have another calf, unless the cow is very valuable, in which case great attention should be paid to the means for prevention of the disease.

DIARRHŒA IN FOWLS.—W. J. Hess, Goldendale, Washington Territory.—It would be difficult to form a correct diagnosis of the cause of death in fowls, without knowing more of the symptoms which they presented. The enlarged and peculiar state of the liver found on the examination of one fowl, does not prove that others were similarly affected. The length of time, from one to four weeks, during which the birds were ailing, precludes the supposition of cholera. Diarrhœa in fowls may be due to a variety of causes, among which may be mentioned improper food, inclement weather, change of diet, etc., or it may be a symptom of contagious disease. Unless long continuous, it is not worth while to resort to remedies, except to very simple ones. A complete change of food may often effect a cure, such as giving soft boiled rice, barley-meal, or barley. To these first two, may be added a little powdered chalk, or a few drops of laudanum. If this is not sufficient, give five grains each of chalk, rhubarb and pepper, to which may be added half a grain of opium in the food twice a day, or perhaps better still, in a pill. Sulphate of Quinine should be added to the drinking water. To whatever cause the disease may be due, the affected birds should be separated from the healthy. The house and yard should be thoroughly cleaned and disinfected, by washing walls, perches, floors, with water, to which is added about six drachms of Sulphuric Acid to the gallon, by means of a common broom or brush. If possible, the healthy birds should be removed to new quarters for a time.

DEATH OF YOUNG PIGS.—Mr. Geo. W. Osborne, Hamilton, Madison Co., N. Y., writes us that he has lost two more pigs, three months old, from some obscure cause. For the first month he fed them on ground feed, corn and oats. Since then has been using cotton-seed-meal in addition, gradually increasing the quantity, until he reached the proportion of two of feed, to one of the meal. The pigs ate about twelve quarts of the clear feed daily, but only half of that amount of the mixture. The pigs were well housed and littered. Have had no clear water to drink, and very little salt. The post-mortem examination showed considerable inflammation of the digestive organs.—It is fair to presume from the appearance presented at the examination, that the cotton-seed was the cause of death, being an inappropriate article of diet for young swine, on account of its extreme richness in albuminoids. If given at all to young animals, it should be in very small quantities, and its effects upon the system carefully watched. We know of one case at least, where death of a pig was produced by an excess of this food. Clean water is essential to the well-being of swine, as it is to other animals, and experiments have abundantly shown the value of salt, not only for the general health of the pig, but also as contributing to the fattening process.

WEAKNESS IN HORSES.—A subscriber from Oil City, Verango Co., Pa., writes us that he has a horse eight years old, which appears to be weak in the hind-quarters, sweats easily when worked, and staggers about.—The animal is suffering from general nervous debility, exhibited most especially in the hind-quarters, and due most probably to previous sickness, from which he has never entirely recovered. Whatever the cause the treatment must consist of giving the best food and plenty of it, oats being preferable to corn. Great attention should be paid to keeping the skin in the most healthy condition, by proper grooming and plenty of friction. Good quarters and good ventilation are essential, also a moderate amount of work, with no excess. Give half an ounce of Powdered Gentian in his food twice a day. Treat the animal patient just as you would a person who is weak, and not yet recovered from some previous illness.

Productive Idaho Valleys.—The valley world around Cauldwell is one of the western wonders. Boise Valley stretches out in the purest atmosphere, a distance of eighty miles of the richest available soil, interlaid with springs, rivers, and geyser wonders as well.

Fayette Valley, a semi-Swiss scene, takes in one hundred miles of the best meadow lands of the Territory. The Malheus Valley, seventy miles in length, holds in its precious soil and area, all possibilities to the farmer and fruit-grower.

Boise and Fayette Valleys are bordered and interspersed with timber lands, that would put Michigan forests to shame. Everything that can be produced from the soil in Colorado or the Sacremento Valley, can be raised in these valleys of Idaho, without irrigation.

Oregon Climate.—For years the "Oregon mist," has been a standing slur with the surrounding States and Territories, and to describe that "mist," would be to say, it is simply a heavy fog, without the chill and malarious taint, that sneaks along with fog in other localities. It never rains in torrents and showers in Oregon, but settles into a heavy dampness, without the least atmospheric disturbance; thunder storms are rare, hail storms, cyclones, hurricanes and blizzards are unknown to the State. After September the soil is kept moist in its dew bath; from the first of November, until the second week in May, the rainfall is regular and copious, insuring the best of crops, and the farmer's prosperity. The climatic conditions of this far-western State, are particularly adapted to good stock. The "chinch-grass," as it is known on the Pacific Coast, is the most healthful grazing to be found in the world. The draught horses of Oregon are remarkable for size, health and endurance. The winters cannot be called severe, when, west of the Cascade Range, the farmers allow their stock to roam the year through, without any attempt at housing or feeding. L. LESTER.

The Herbage of a Permanent Meadow.—The great value of the experiments conducted at Rothamsted, Eng., by Messrs. Lawes and Gilbert, has often been acknowledged in these columns. One important feature of these experiments is their continued character. Results derived from the same treatment of plots of ground for twenty and thirty or more years, have a value far beyond those experiments lasting but a year or two. In the report now before us, we have only one class of results from twenty years' experiments upon a meadow of mixed herbage. The "Agricultural Results" were published in 1880. The present report gives the "Botanical Results," and is the work of that most conscientious and pains-taking botanist, Dr. Maxwell T. Masters, editor of "Gardener's Chronicle," London (Eng.) This report occupies over two hundred and thirty of the ample quarto pages of the Transactions of the Royal Society, and is illustrated by tables that are wonderful in their completeness. The object of these experiments, which have been continuous for over twenty years, was to show the effects of fertilizers upon the herbage of a meadow. Some twenty-two plots were carefully measured, some were left without any treatment, and others had weighed quantities of manure and different fertilizers applied to them. Records of the fertilizers, and their effect upon vegetation, have been made from year to year. These experiments involved a vast amount of mechanical labor. To take a fair sample of the herbage of each plot was no small task. The collectors followed the mowers, and a portion was taken from each swath; these portions were carefully mixed, and a sample of ten or twenty pounds taken for examination. The specimens from each plot were overhauled and assorted by experts, including boys, who became wonderfully skillful in detecting the different plants. An account was made of the numbers of each species, and they were also grouped as gramineous (grass-like) plants, leguminous (clover and related) plants, and miscellaneous, mainly weed-like plants. These results are presented in tables, allowing a comparison to be made of the effects of different fertilizers. Should a study of these show anything of value to our farmers, we shall make use of them. Our present object is to acknowledge the receipt of this remarkable contribution to scientific agriculture, and again to call the attention of our readers to the extenstve, accurate, and most valuable experimental work carried on at Rothamsted, England.

Burning Out Stumps.—E. L. Burnett, Nunda, Colo., asks our opinion of the following method of destroying stumps: "In autumn or winter bore a one or two-inch hole eight inches deep. Drop into it one or two ounces of saltpetre, fill the hole with water, and plug it up. In spring remove the plug, pour in a gill of kerosene and ignite it. The stump will smoulder away without blazing, to the extremity of the roots, leaving nothing but ashes."—The above "recipe" has been going the rounds for several years. That saltpetre will cause a green stump to disappear in this manner, looks as improbable as that a stump holding a gill of kerosene will "smoulder away without blazing." Still, we have not tried it. If any of our readers have, will they kindly give the result?

An Inexpensive Pudding.—When eggs are as scarce and costly as they often are, we can commend the following, if as good as that we have tasted, made by this recipe: Have ready a pint of bread crumbs, a quart of sour apples, pared, cored and chopped moderately fine; a full cup of sugar, and two or three tablespoonfuls of butter. Butter a pudding dish, begin with a layer of apples, sprinkle over them some sugar and a few bits of the butter, nutmeg or cinnamon as desired, and cover with bread crumbs; then more apples, etc., repeating the layers until the dish is full, the top being bread crumbs. Cover tightly and steam three-quarters of an hour, finally browning slightly in the oven. To be eaten warm, with cream or butter and sugar rubbed together.

Household Recipes. — Without a variety of available fresh fruits for the preparation of desserts, the following recipes will supply the deficiency most admirably: *Suet Pudding.*—One cup each of beef suet, chopped fine, raisins chopped, sweet milk, sugar, three eggs, four cups flour, a teaspoonful soda, two of cream tartar or four even teaspoonfuls baking powder, and a little salt. Steam two hours. Half of above is sufficient for five or six persons. For sauce, use cornstarch or sweet gloss starch, made the same as for thick laundry starch. Season well with butter, salt, sugar, and extract of lemon.——*Orange Shortcake.*—Two eggs, one cup sugar, beat quickly and lightly together, add five teaspoonfuls cold water, one cup flour rounding with two teaspoonfuls of baking powder, sifted together, a pinch of salt, flavor with lemon extract. Bake in two jelly pans in a hot oven. For icing use one cup sugar, two tablespoonfuls water, and boil until it threads from the spoon. Remove from stove, and when a little cool stir in the white of one egg, well beaten. Slice three or four oranges, spread the cake with the icing and a layer of the slices; then add the second layer, treating the top in the same manner. Serve cold with sweet milk or better still, whipped cream. HAZELWOOD.

Gas-Lime as a Fertilizer.—With the continued extension of gas-works, even to quite small villages, there is an increasing amount of so-called "gas-lime;" and, taking the year together, no other single question comes to us so often, as, what is the value of this product as a fertilizer? When fresh from the gas-house it has an offensive odor, and so many associate unpleasant smells with fertilizers, that they frequently overestimate this material. When illuminating gas is produced by heating bituminous coal in the retorts, several impurities are mixed with it, sulphur or compounds of sulphur among them. To remove these, one part of the process is to pass the gas, on its way to the distributing reservoir, through boxes of fresh-burned lime. The sulphur unites with the lime, and forms calcium sulphide, formerly called sulphide of calcium, or sulphuret of lime, etc. When the lime ceases to longer act efficiently, it is thrown out, and fresh lime introduced. This refuse lime is constantly offered to farmers as a fertilizer, often at a nominal price. Properly used it may be as valuable as a mixture of common lime with some land plaster; improperly used it is poisonous to plants, as many have found to their cost and disgust, and when the sulphur and lime, or the calcium sulphide, is exposed to the air for a sufficient time, the sulphur is oxidized to sulphuric or sulphurous acid, the calcium (or basic metal of lime) is oxidized at the same time into lime, and the union of the two forms sulphate or sulphite of lime, or both. The sulphate of lime is the same as plaster, gypsum or land plaster, so much used as a fertilizer. The rest of the refuse is mainly common slaked lime, though usually carbonated, making it just the same as air-slaked lime that has been sometime exposed to the atmosphere. It will thus be seen that while the fresh gas-house lime is not a safe application direct to crops, or to soils to be soon seeded, yet if it be left sufficiently spread out, (better under cover from rains, but not absolutely essential), until disagreeable odors have mainly passed away, which may take place in from two to six months, or longer, the material is probably about equal to common air-slaked lime: or it may be somewhat more valuable on soils where land plaster produces good results.

Chat with Readers.

Lima Beans.—*B. Miles*, Lorain Co., Ohio, sends us a seasonable hint. He makes the hills for the beans four feet apart each way, in two rows. After setting the poles, those of four hills are brought together at the top, and firmly tied with tarred twine. These poles soon become covered with vines, and stand so firmly, that he has had none blow over, while the beans hung down in the leafy tents thus formed, in such a manner that Mr. M. says, "it is just fun to pick them."

Making Straw into Manure.—*Mr. J. J. Ballinger*, Cheney, W. T., asks us for a good way to convert straw into manure. We know that live stock will do this most satisfactorily.—Feed the straw to sheep or cattle, with a daily ration of grain or hay, or both. If the straw must be reduced to a field fertilizer without the aid of the animal system, it needs to be kept continuously moist. If this is not possible, the straw may be plowed under, where it will afterward decay. If none of these methods are available, the straw may be burned, and the ashes applied to the land.

Trouble With a Rose Bush.—*Mr. C. L. Whitman*, Ludlow, Ill., sends us a young rose bush, with an excrescence, the size of an English walnut, growing upon the stem, just below the surface of the ground. The swelling has all the characters of a gall, and is no doubt due, like other galls, to insects, which pass their larval state in them. We were unable to find the insect, though as the frontier men say, there was "a plenty of sign." It is a proper precaution to burn all such excrescences that may be met with, whether they occur above ground, or below the surface.

A Stimulant for Tomatoes.—"*Beginner*," Wakefield, Mass., asks, "What artificial fertilizer can be used upon a crop of tomatoes, to give a quick and temporary result?" The soil for tomatoes may be easily made too rich, and the vines stimulated to rampant growing, rather than to fruit bearing. A light, sandy soil, with a little well decomposed stable manure in the hill at planting, gives better crops than a strong soil heavily manured. Of the artificial fertilizers, a good superphosphate is likely to give the best results. A tablespoonful or so to each plant, to be worked into the soil at the time of setting out, or rather more applied later, when hoeing, will probably be of good service.

Cabbage Maggots.—*Mr. O. D. Smith*, Andes, N. Y., writes us, he has been troubled for the past few years with a small white maggot on the roots of his cabbages, both while in the seed-bed, and after they were set out. They eat off all the small roots, and sometimes bore the stem. The maggots are apparently those of the cabbage-fly of Europe (*Anthomya brassicæ*). When a third of an inch long, they leave the infested cabbage and pass into the ground, from which, after pupation, the mature flies come forth. Several broods are annually produced. The best remedy thus far employed is lime, which is best applied in the form of lime-water. Superphosphate as a fertilizer acts as a preventive. It is not best to grow successive crops of cabbage on the same soil.

Catching a Wild Cow.—*Mr. F. W. Godsal*, Fort Macleod, Alberta, Canada, wishes to know if there is any plan or trap for catching a wild cow by the head, and holding her in order to milk, or otherwise handle her.—Have a set of stanchions set in some shed, or even an open yard, into which the cow may be driven. Then if feed is placed in front of the stanchions, she will be forced by hunger to put her head through, and then by pulling a cord the movable stanchion may be shut, and the cow caught. You will have a good time "gentling" her, but be patient and do not strike her, or hurt her in any way. One blow or kick will undo all the progress towards taming her you can make in half a day. Tie her legs to milk her, but do not hurt her.

Grape Rot.—*Mr. J. H. Glem*, Coultersville, Tenn., writes us, that he has been much troubled with grape rot. We do not know of any certain remedy for this disease of the vineyard. This destructive work is doubtless that of a small, parasitic fungus. The fungus plant preys upon the juices of the berries, and causes them to change color, and finally drop off. Some grape growers have used Flowers of Sulphur with some success. This substance, when applied to the foliage, has proved a remedy for the leaf mildew, so prevalent in many parts of the country. The rot of the berry is much more difficult to reach. Paper bags placed over the clusters just after flowering, tend to keep off all disease germs, and have served well in other respects when employed.

The Quince Borer.—*Mr. J. A. Price*, Mt. Vernon, N. Y., writes us for a remedy for the quince borer. This pest of the orchard was described, with engravings, in the December *American Agriculturist*, 1883. The striped parent beetle deposits its eggs in the bark near the base of the tree, from June to August. Petroleum paper wrapped around the tree, partly below ground, will keep off the beetle. The deposited eggs are killed by an alkaline (potash or soda) wash. Two pounds of whale-oil soap, and four ounces of sulphur, in a pailful of water, is a cheap and reliable mixture to apply to the trees. The borers already at work should be cut out, or killed in their burrows with a wire probe. A knife in careless hands may do even more damage than the borers. Cut away only enough bark to admit of reaching the intruder.

Pig Raising.—*Mr. L. M. Stearns*, Cardiff, N. Y., wishes answers to the following questions: What is the most prolific kind of swine that have the following qualities—easiest keepers; fatten at any age; do well on red clover; make from one hundred and fifty, to two hundred pounds of pork at eight months old, and will do to raise in Central New York?—The small Yorkshires (white), and the Essex (black) are the easiest keepers. They will fatten at any age, in fact, if they are fairly well fed, are always fat. These pigs do well on red clover, keep fat, and will make two hundred pound pigs at eight months old. A cross-bred pig will do better. Say pigs half small Yorkshires, and half Berkshire, with the latter for their dam, or the Yorkshire or Essex crossed upon big sows of any breed. You can raise any kind of pigs you wish in Central New York, if you will take care of them, and if not, you had better not raise any.

Preparing Fish as a Fertilizer.—"*Amateur*," Artondale, Wash. Ter., can get any quantity of fish, but is at a loss how to use them. He procured six tons last fall, and stratified them with alternate layers of earth. This spring they are not half decayed, "while the perfume is horrible." On the Atlantic Coast, the fish guano is a secondary, or at least a joint product. The fish are first pressed for their oil, the meat and bones are then dried and ground, and in that condition the fish scrap decomposes very readily, either in a compost, or applied directly to the soil. The oil is of no value as a fertilizer, and retards the decomposition. Still you have had your "fish pie," made only during the cool months. We do not know what kind of fish you used, but it can hardly be more oily than the menhaden, which the New England and Long Island shore farmers formerly composted in the manner you described. Warm weather will no doubt hasten the process, and the odor can be suppressed by a thicker covering of earth upon the heap.

The Transmutation of Grain.—"*A. W. M.*," Alamosa, Col., asks us if it is a fact, that either in England or America, oats have been sown, and after the crop had been fed off by sheep the first season, the second year a crop of barley has been reaped, no other seed having been put in in the mean time. Also, has wheat in like manner resulted from the sowing of barley? That both barley and wheat may have appeared under the above conditions is possible, but that oats ever change into barley, or barley into wheat, we have no proof. These belong with the still more general belief that wheat will produce chess. Numerous people are ready to assert that they have seen these transmutations, but when asked to show them to others, the evidence always fails. Elihu Burritt, known as the "Learned Blacksmith," recorded his observations in England in a book, in which he gravely stated that he saw a case of the transmutation of a field of one kind of grain into another. The farmer declared he had sown wheat, and there was a field of barley, or *vice versa*, and the wonderful fact was written down, and appeared at length in a costly book. Mr. Burritt was probably "learned" in many things, but not in what constitutes evidence. We have been on the look out for a stalk that was partly wheat and partly chess, for these many years, and have failed to see one.

Salt as a Fertilizer in the Orchard.—*A. W. Langdon*, Erie Co., N. Y., asks our advice "as to the quantity of salt advisable to use about fruit trees in a old orchard." There is no more positive knowledge as to the value of salt as a fertilizer for fruit trees, than there is regarding its utility when applied to field crops. The fruit trees to which it appears to have been most beneficial, are the plum and quince, and on these it has been used more as a remedy for diseases, than as a fertilizer in the proper sense of the term. Salt in sufficient quantity applied to the roots, will destroy all vegetation, including the largest trees, hence caution must be exercised. Mr. Meech, the successful quince grower of New Jersey, advises a pint to be applied to the soil around quince trees that are two or three years old. Whether salt will produce a better effect upon old orchard trees than a good dressing of fine bone, we much doubt. If applied to old orchard trees, we should prefer to try two quarts, sprinkled upon the soil as far as the roots extend, to a larger quantity. We hope Mr. L. will try the salt, and also upon some of the other trees, a liberal dressing of ashes, of bone flour, and stable manure, and report the comparative results.

City People as Farmers.—*J. Reese*, Covington, Kendon Co., Ky., asks: "Can city people make a success of farming?" That depends—if the people are in successful and profitable business in a city, they may possibly make enough to allow them to live on a farm. This is a frequent question, and the answer is not intended to be a trivial one. The question gives expression to a too common opinion, that a farm will somehow run itself, and not only afford city people a rural home, but it may return an income besides. A farm, to be successful, requires all the care and business application that is needed in any other business. If one who has built up a profitable business in dry-goods, hardware, or groceries, in a city, upon moving to a farm will apply to farming the same business methods that have made his city occupation profitable, the probabilities are that he will succeed at farming. Unless he does this, and if he at the same time continues his city methods of living, a failure is certain to follow. We would not imply that farmers should live any more poorly than city people. A merchant or tradesman works for money and with that, everything consumed in the family is purchased. On the farm, the object is to produce everything, so far as may be, that is consumed by the family. A different kind of economy must be studied. The provisions needed by the family must be largely produced on the farm, and for the few things that must be brought to the farm from the outside—coffee, sugar, clothing, and a few others, something must be produced that will sell readily and bring the money, to allow them to be purchased. City people who turn farmers may succeed if they will really become farmers.—If they remain city people, they had better remain in the city.

Farming in England.

ALFRED TRUMBLE.

During a recent tour of Europe, the writer spent most of his time among the farmers of the countries he visited. He was familiar with country life at home, and everywhere contrasted the condition of the foreign farmer with that of the agriculturist in the United States. It is for the purpose of illustrating these contrasts, that he presents this sketch and its accompanying pictures to the public. Everything about farm-life in England is strange to American eyes. The great waste of land and labor in hedging and ditching is striking to one accustomed to our own more economical and ready system of fencing. All year round, the care of hedges and ditches on a farm of any size, keeps

AN AGRICULTURAL LABORER.

THE PLOW-BOY.

several men employed, and the farms themselves seem strangely cramped to one accustomed to the broad, open stretches of the West. The people in their odd dress, work more slowly than do the laborers in our own fields; the horses are larger, heavier, and more deliberate in their movements, and the implements of farming are often unwieldy and ridiculously primitive in form. Almost the only feature of the country in England that strikes an American as enviable, is the magnificent roads, which even in the worst of weather, are fairly good for travel. The spirit of improvement is now spurring the English farmers into an approach to the enterprise of our own land. Agricultural schools are doing good work, and modern machinery is being extensively introduced. In Suffolk, Norfolk, Lincoln, and some other counties, agriculture has attained to a high degree of perfection, but in others it is in a primitive state.

Land in England is more frequently leased than owned by the farmer. Many leaseholds have been in one family for generations, and their holders could buy the land as far as money was concerned, but the great land-owners will not sell it, and the farmer remains a tenant. He may pick up odd spots of ground here and there, and often will be found farming lands of his own ten miles apart, and residing and cultivating a large estate, for which he pays rent as well. Wheat, barley, and stock-farming, are the great agricultural interests of England. In the western counties, where the climate is more suitable for grass and less so for wheat, dairy farming and stock-raising rule. The eastern counties furnish the wheat-land, but all over England are found permanent pastures, where countless herds fatten. Yet the supply of meat is still so insufficient, that large imports from America are necessary.

America is, indeed, the great bugbear of the English farmer. As a recent statistician truly observes: American competition has reduced his profits on grain-growing and beef-raising more than fifty per cent. He pays a higher rent than we do, and uses more expensive machinery. Moreover, the high rent forces him to demand high rates for his productions. American wheat and American beef can be landed at Liverpool at from a quarter to a third less the bushel and pound than the English can be sold for, and still pay our own farmers a better profit. The English farmers are like their tools—built to last, but not to work fast. They take things easy, and are little interested in affairs off their farms. They do not read many papers, and almost their only relaxation is found at an annual fair or two, and at election time. Of late years, the sporting farmer has formed an exception to the rule. He imitates the follies and extravagances of the great folks, goes hunting, plays billiards, bets on the races, and drinks his way down the road to ruin, rapidly and easily, but he is an exception fortunately, and will remain one.

The English farmer is a good feeder. He believes in treating himself and his household well. His house is commonly as solid and old-fashioned as his tools. One Welsh farm-house, of which we present a picture, is more than four hundred years old. Its tenant is a very wealthy man, but he cannot buy it, though he desires to do so and rebuild.

Here and there are found old manors, deserted to the winds sometimes, at others still inhabited. They are absolutely sepulchral in their gloom, and justify the ghost stories with which they are one and all associated. The mansions of the great land-owners, ancient and modern, are, on the contrary, marvels of luxury. In them science has remedied the imperfections of the past. The proprietors of some of these estates farm them themselves, on a vast scale, frequently with American methods and machinery.

Society in rural England is divided into as rigid departments as it is in the cities. The squire steps aside to let my-lord pass, and the tenant-farmer takes off his hat to the squire. As for the agricultural laborer, he doffs his hat to every one, from the great man of the district down to the "squire's man," whose business it is to keep his master posted on all the small goings-on of the community he lords it over. The English agricultural laborer is a singular individual. Except that he has a permanent home, he is no better than the tramp hands who are employed upon our great western farms, when the season comes round. He is absolutely uneducated, and he knows little more of the soil he helps to cultivate, than the horses which drag the plow or the crows which follow the sower. He begins life as a crow-boy, sitting on a fence and shouting all day long, to keep the crows from plundering the furrows; he ends life a man of full size, but only a child in intelligence still.

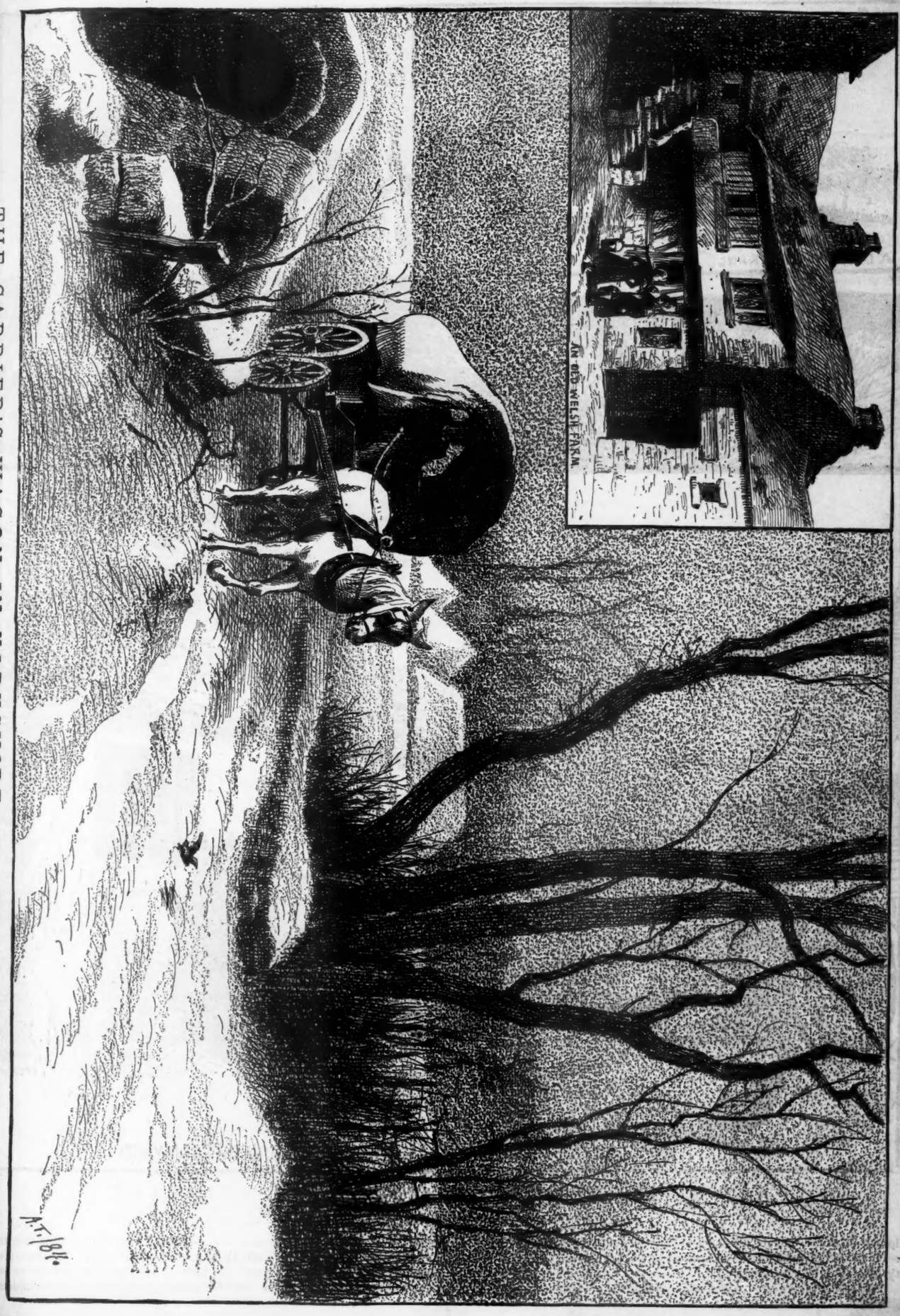
THE SPORTING FARMER.

THE SQUIRE'S MAN.

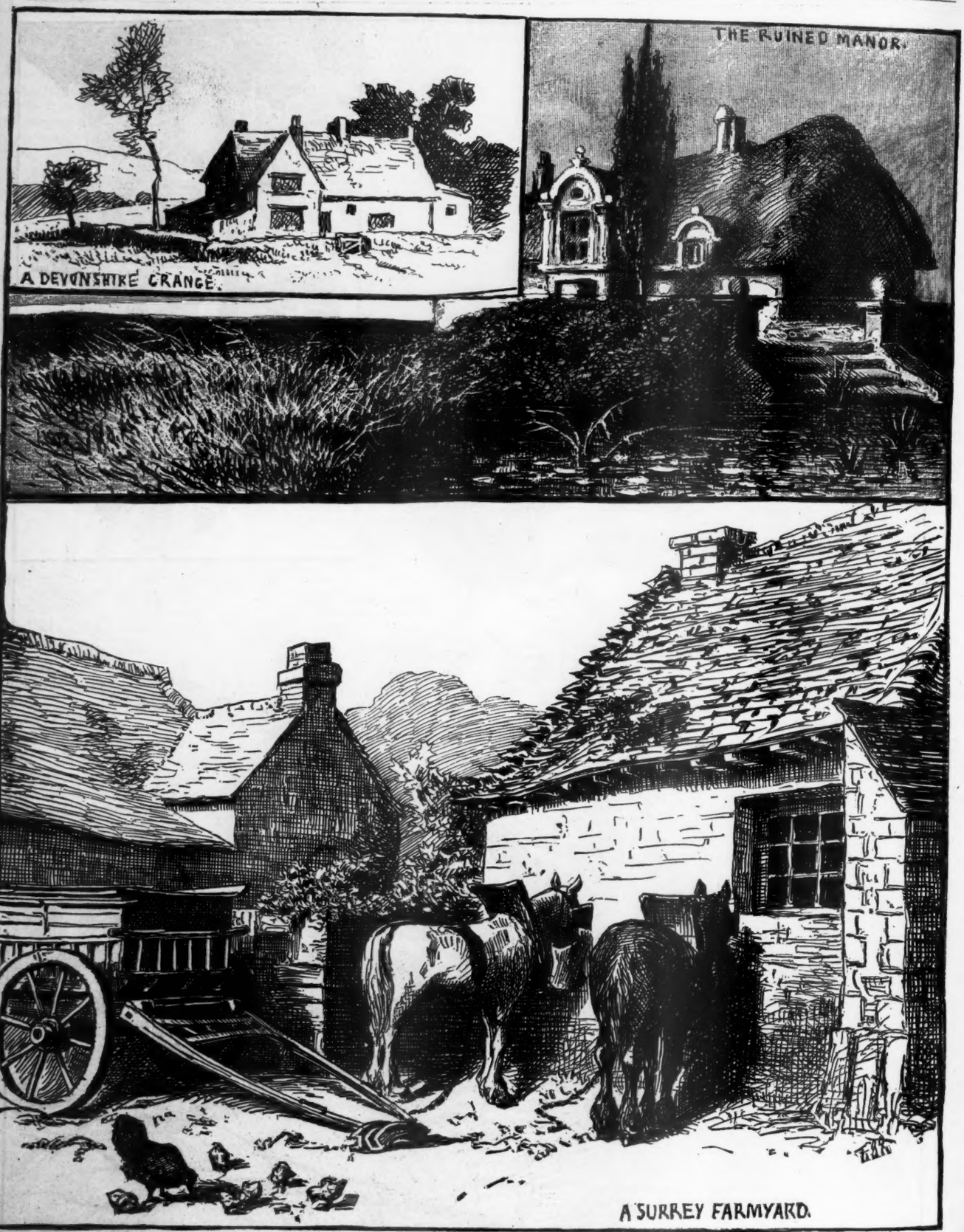
The condition of the English agricultural laborer varies with that of the district to which he belongs. On poor lands, he earns at the best eight shillings (about two dollars) a week, on good ones he rises to fifteen and even twenty. In some districts, we find him living rent free, in others he has to pay rent. But whether he pays the rent in money or not, the landlord gets its price from him, and to keep body and soul together, he must work constantly and put all of his family at tasks. His sons begin to do some kind of service almost as soon as they can walk. Then they are promoted to the plow, or otherwise to assist about the farm. If such a boy can get a job in the barns or stables, his highest ambition is achieved.

The misery of the bulk of agricultural laborers in over-crowded England is indescribable. Numbers have of recent years been sent to Canada and Australia by popular subscription, but the mass which remains is in no better condition than before. Not a little of this is due to himself. Many landlords do their best to improve the condition of their laborers, but those who should benefit by their efforts, are so steeped in ignorance and so unmanned by hardship, that they are incapable of assisting their benefactors in their good work.

An English writer not long ago said: "Though slavery has been unknown in England for centuries, we have, in the agricultural laborer, a creature who is a slave in everything but name. He is a vassal of the soil. He belongs to the same estate his great grandfather did, just as a Russian serf be-



THE CARRIER'S WAGON IN YORKSHIRE.—*Drawn and Engraved for the American Agriculturist.*



PAST AND PRESENT OF ENGLISH FARM LIFE.

Drawn and Engraved for the American Agriculturist.

longed with the land he tilled. Only, where the serf was tied down by law, he is chained by poverty, ignorance, and degradation."

Our agriculturists are progressive, intelligent, unwearying in their efforts for advancement and improvement. In 1862, Horace Greeley predicted exactly what has come to pass. With improved machinery and advanced ideas, the American farmer can more than compete with his English cousin, thousands of miles away. The American farmer has himself to work for, and he knows the land he improves will benefit his children.

A Small Barn.

E. O. LEE.

A general barn should provide ample store-room for hay, grain, straw, etc.; comfortable quarters for the live stock; convenient storage for wagons and all farm implements, and the best arrangements for making and preserving fertilizers to be returned to the land. The plan herewith presented (figs. 1, 2, and 3), is for a barn thirty-six by forty feet, with a lean-to shed upon one end. The threshing floor (fig. 2), eleven feet wide, is entered by a sliding door ten feet high, kept in place at the bottom by a hewed sill, placed nearly on the level of the floor and even with the gravel drive-way outside, making an easy entrance for heavy loads. First, at the right, entered by a door-way three feet wide, is the shop six by six feet, provided with work-bench, vise, etc., and lighted by two small windows. There is also a window of six, nine by fifteen, lights above the entrance, and a similar one at the other end of the threshing floor above the roof of the shed, which admit of all the light needed. Next to the shop is a floorless room eleven-and-a-half by sixteen, suitable for a wagon and farm tools, and is entered by a sliding outside door eight feet wide. A stairway, starting two feet back from the line of the threshing floor leads through a passage two-and-a-half feet wide, to the floor of the scaffold and granary. The latter (fig. 3), sixteen by eighteen feet, entered by a door three feet wide, is provided with cribs for corn on two sides, two-and-a-half feet wide and nine feet high, sufficient for four to five hundred bushels of corn.

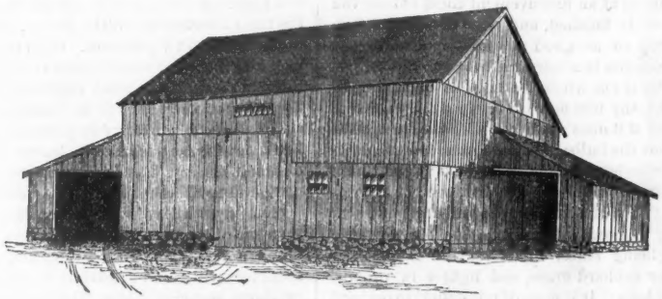


Fig. 1.—EXTERIOR OF A SMALL BARN.

Bins for other grain may be constructed on the other sides as desired. The loft over the granary is reached by a step-ladder (the fruit-ladder may be kept there), and is a good place to store lumber, fruit packages, etc. The horse stable, fifteen-and-a-half by sixteen feet, is divided into three stalls and has no floor. The slide door opening into the side shed is used in getting in dry earth and other absorbents, while the manure is thrown out at the rear door. A small door next to the stairs is very convenient, and a similar one opening into the rear stall makes a good place to feed a calf when one is kept there. The hay bay has a girt in front two or three feet high, supported by short studs, upon which boarding is fitted tight to the floor, to prevent any escape of grain in that direction while threshing. Similar boarding in front of the cow stable will serve the same purpose and keep the fodder in place. There should be a permanent ladder at the side of the centre post, reaching from the bay girt to the beam. The boarding in front of the stall next to the hay-mow should be hinged, so as to allow a passage-way there when the stall is not occupied. A sliding door at the rear affords a convenient place to supply absorbents as well as a short passage to the shed. Through a sliding-board window, eighteen by eighteen inches, the manure may be thrown into a shed, where it can be worked over by hogs when desirable. The mangers should be two-and-a-half feet wide, and provided with comfortable ties. The rear door of the threshing floor need not be more than eight feet wide and seven-and a-half feet high, to slide on rollers like the others. The stable doors opening into the yard might as well have hinges. The cistern, seven or eight feet in diameter, should be properly protected from the yard and supplied with a pump and trough. A gate between it and the corner of the barn would allow the passage of a wagon when desired. There may be a floor over the rear part of the threshing-floor on a level with one in the shed, thus making more room for straw or fodder. The following estimate contemplates boarding the outside with ordinary barn boards, and lining the cracks with cheap half-inch stuff two to four inches wide, except the gables, which are without lining and lap over the boarding below the end rafters, being set flush with the same. The crib sides of the granary should be boarded with strips three or four inches wide and an inch apart, being set upon a narrow piece of zinc, nailed over the ends of the lower boards to keep the water out.

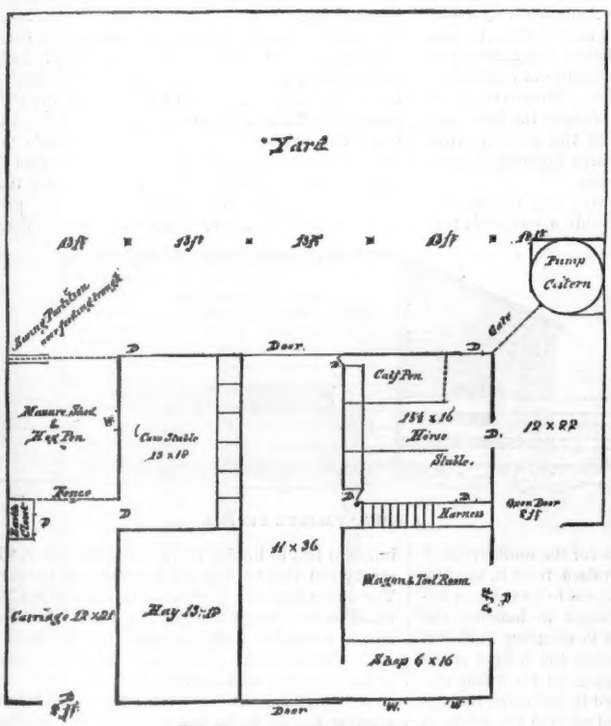


Fig. 2.—MAIN FLOOR OF BARN.

In the side of the granary, between the bins and crib, there might be an opening, through which corn could be shovelled from the wagon and afterwards into the crib. A shute might be constructed, through which grain could be taken directly from the bins to the bags on the wagon in the shed below. The broad boarding upon the side of the wagon-room and granary affords a good place to hang rakes, hoes, shovels, forks, etc., where each can be taken down without disturbing the others, and all be convenient and out of the way. The general appearance of the building might be improved by using dressed boards of uniform width, and covering the cracks with good battens; and further by surmounting the roof with a neat ventilator, and covering with paint. The stables might be paved and cemented at no very great cost.

Estimates of Material and Cost:

SILLS.					PLATES.				
2	40	feet	long, 6x6,	240 feet.	2	13	feet	long, 6x6,	78 feet.
3	36	"	" "	324 "	2	11	"	" "	66 "
1	48	"	" "	144 "	2	16	"	" "	96 "
1	30	"	" "	90 "	2	purline,	40	ft. long,	3x6, 120 ft
1	22	"	" "	66 "	1	shed,	64	"	" 96 "
3	16	"	" "	144 "	1	"	48	"	" 72 "
2	11	"	" "	66 "	1	"	30	"	" 45 "
1	13	"	" "	39 "	GIRTS, BRACES, ETC.				
3	8	"	" "	72 "	50	pieces	16	ft. long,	3x4, 800 ft
1	6	"	" "	18 "	6	"	13	"	" 78 "
2	4	"	" "	36 "	20	"	18	"	" 360 "
POSTS.					RAFTERS.				
12	16	feet	long, 6x6,	576 feet.	42	24	feet	long, 3x4,	1008 feet.
7	6¼	"	" "	196 "	71	14	"	" "	994 "
4	8	"	" "	96 "	JOISTS.				
BEAMS.					16	12	feet	long, 2x6,	208 feet.
4	36	feet	long, 6x6,	432 feet.	16	16	"	" "	256 "
4	16	"	" "	192 "	12	16	"	" 3x6,	288 "
3	18	"	" "	162 "	18	12	"	" "	324 "
1	13	"	" "	39 "					

Total frame stuff, 7761 feet, @ $18 per M.....$139.70
Shingle lath, 6192 feet, @ $6 per M..... 37.15
Boards, 16 ft. long, 5000 feet, @ $25 per M..... 125.00

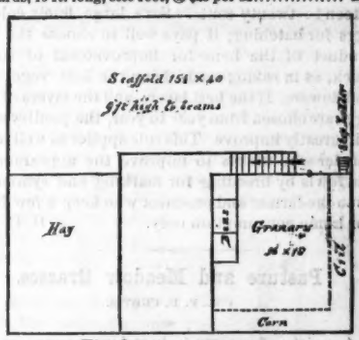


Fig. 3.—LOFT OF BARN.

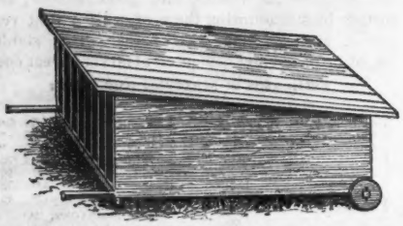
Yellow pine, 12 ft. long, 432 feet, @ $25 per M.....	10.80
Hemlock, 12 ft. long, 432 feet, @ $18 per M.....	7.77
" 13 " " 468 feet, @ $18 " "	8.42
" 16 " " 865 feet, @ $18 " "	15.55
Half-inch lining, 1000 feet, @ $12.....	12.00
Cedar shingles, 4x24, 18,500, @ $9.50.....	175.75
Stone foundation.....	45.00
Labor.....	150.00
Nails.....	6.00
Rollers and hinges.....	6.75
Windows.....	5.00
197 ft. eave gutters and tubing, @ $10.....	19.70
Cistern and pump.....	30.00
Sundries.....	5.41
Total cost,.....	$800.00

Practical Poultry Suggestions.

There need be no trouble in moving sitting hens from the nest in which they have been accustomed to lay, to the one prepared for sitting. The nest should be made before the hen is disturbed, and so arranged that she can be shut in for a day after being moved. Place the eggs in the nest and after dark set the hen gently on them, and leave her as soon as possible. Fowls accustomed to handling will not object to this change. It is well if possible to set them in a place away from other fowls, where they will be perfectly quiet and in partial darkness. Give the fowls intended for breeders a free range until planting time at least. This will keep them in a thrifty healthy condition, and prevent an accumulation of fat. A large percentage of eggs will hatch, and the chickens will be stronger and get a better start.

Small coops for chickens should have a bottom, otherwise the digging of the hen in the ground will make hollows in which water may collect, and if the chicks are not drowned they will get wet, which may lead to cold and roup. To make a continuous growth, chicks should be dry and warm at all times. A comfortable coop is shown in the engraving. If one wishes to be very careful of a few

choice chicks, small wooden wheels can be placed on the side near the rear end, so that the coop and contents can be trundled under a shed, or on to the barn floor until a shower is over. Young chicks should be fed in small quantities, and as often as once in three hours. Give only what they will eat clean at each feeding. A mixture of corn-meal, and ground oats is very nourishing, and should be either wet with boiling water, or baked in a cake and then soaked in warm milk. Feed no hard grain until six weeks old, and up to this time chicks



A MOVABLE CHICKEN COOP.

need no drink, though they will enjoy sour milk occasionally. The most critical time in the growth of chickens, is when the stiff wing feathers begin to grow. After this period is passed, they will push along rapidly, and should be ready to dress as broilers in ten to twelve weeks, when at from thirty-five to forty cents a pound, they will bring as much as if fed until six months old, and sold at fifteen to twenty cents. Save large, finely colored eggs for hatching; it pays well to choose the best product of the hens for improvement of future stock, as in saving seeds from the best vegetables and flowers. If the best layers, and the layers of best eggs are chosen from year to year, the poultry stock will greatly improve. This rule applies as well to the fancier who wishes to improve the appearance of his fowls by breeding for marking and symmetry, as to the farmer and producer who keep a few fowls for home consumption only. H. C. B.

Pasture and Meadow Grasses.

COL. F. D. CURTIS.

A variety of grasses is best for pastures, so that there may be a continuous growth. The seeds of grasses, as well as other seeds, when buried at such depth that they do not germinate, remain dormant for a long time, and will grow when brought by tillage near the surface. There is always more or less self-seeding, as the earth is filled with seeds which have acumulated and only waiting favorable conditions to show themselves. It is not always necessary to sow a variety of grass in order to have such a sort represented in a pasture, but of course a variety is more certainly secured by so doing. If the soil is made rich before seeding, it will help to increase the yield of self-seeded grasses. Making the surface smooth and fine will also aid in bringing out the latent seeds.

For a pasture, variety of grasses should be selected adapted to the land and the purpose of the pasture. Timothy (*Phleum pratense*), is the poorest of the cultivated varieties of pasture grasses, as it makes very little leaf herbage, and after the stems have matured the after growth or after-math is small. It is the best grass for meadows of any single variety, both for yield and market, being better suited to horses than cattle. It is among the poorest for sheep. The best single grass for pasture is orchard grass (*Dactylis glomerata*). This is also the earliest, except the small blue grass (*Poa pratensis*), so common in old pastures, dooryards, and along the highways. Orchard grass is valuable for its prompt renewal after either cutting or grazing, and for its permanency, being superior to Timothy in this respect, and not excelled by any, unless it is Red-Top (*Agrostis vulgaris*), on rich land it will furnish a fresh bite in three days. No other grass is equal to it in this respect. It should always be allowed to produce an after-math before cold weather sets in, or the crowns will freeze and die. The after-math acts as a protection and is necessary in a cold climate. It will not, however, cut so readily as either Timothy or clover, owing to the form and tenacity of the roots, which are long and fibrous, and grow in bunches. The sod makes more enriching material than any other grass. An orchard grass sod always makes mellow land, as the roots penetrate to a great depth and loosen up the sub-soil. The roots of Timothy are small and of shallow growth, hence are easily thrown out by frost and make a weak sod. Orchard grass is not so well adapted for meadows as other varieties. It ripens at an inconvenient time, before the spring work is finished, and does not produce so large a crop or as good a quality. Unless cut when in blossom it is hard and woody. Timothy is much better if cut when the seed is beginning to form. Timothy will flourish either on dry upland, or low land if it does not heave with the frost, so as to throw out the bulbs. Orchard grass is also adapted to any variety of soils, except very wet land. Red-Top grows well on moist land, even if it overflows, and it will also do well on dry land. It makes hay of excellent quality, good for any kind of stock, being softer in its texture than either Timothy or orchard grass, and lighter in proportion to the bulk. It is next, if not equal, to orchard grass in value for pasture, with the exception of extreme earliness and quick renewal after croping.

Silk Culture—Food Plants.

MRS. M. J. G. HAMMACK.

There are hundreds of thousands of women who, being unable to do hard work, have no means of converting labor into capital, and to these silk culture is really the creation of a new industry. For the infirm, the invalid, and the child, it is the open door to a competency, with no burden of drudgery. Let no one suppose that the cultivation of silk is a difficult pursuit, for it is a very simple one, and as instructive and interesting as profitable. There is no real obstacle to its success in America, for the dry and bracing atmosphere of this country is extremely healthy for the worms. One of the advantages of the silk industry is that a comparatively small amount of capital will yield a large income, so that to a person with limited means and a family of children, the culture of silk holds out encouragements of extraordinary promise. Women and children can make one hundred dollars the first year after planting the trees, and the second, from one hundred and fifty to three hundred dollars, with one acre of mulberry trees.

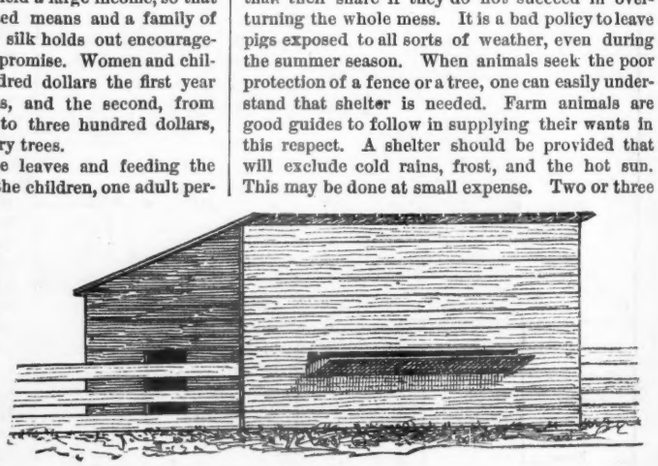
The gathering of the leaves and feeding the worms may be done by the children, one adult person always directing the business. It should be borne in mind that in silk culture the brain is of more importance than the hand. The first important step is to prepare the proper food for the silk worm. The leaf of the mulberry is the best, and this tree will grow and the silk worm thrive upon it throughout the United States. The maclura or osage orange, is a substitute for the mulberry, and a fair crop of silk can be raised from it, but any one hoping for complete success in its use may become discouraged. The danger in handling the thorny osage, the difficulty in securing sufficient leaves on account of the thorns, the danger of the succulent leaf at the last stage of the worm, and the great care to be observed in not using the upper end of the shoots, should prevent any one from relying entirely upon the osage as principal food. It will answer to experiment with while the mulberry trees are growing, but to use osage entirely, doubles the expense, both in gathering leaves and using the branches. Worms fed on branches are the most healthy, as that is their natural way of living, and they enjoy creeping about on the twigs. The mulberry will ever retain its superiority as a reliable and continuous food for the certainty of yielding an unexceptionable quality of silk, and its vigorous growth and production of suitable foliage invest it with properties not combined in any other plant. One-year-old trees can be used to make a crop of silk, and where the plants are set out close together as for a hedge, the clipping of the twigs and branches will favor the growth of numerous shoots which will become valuable leaf-bearing branches the next season.

For standard trees they should be set out twelve feet apart each way, and in this mode of cultivation the trees interfere but little, if any, with the use of the land for other purposes. Corn and small fruits may be grown between the rows of trees. Planting in hedge rows is the most approved mode of cultivation for convenience in gathering the leaves.

The Moretti mulberry is profitably grown for a hedge, as the large size of its leaves make it a very desirable variety. The Italian mulberry is generally preferred to all other kinds. It grows rapidly, and is clothed with leaves fifteen or twenty days earlier than the other varieties. The Russian mulberry has taken a very prominent place, and owing to its hardiness and rapid growth is in great demand; it produces fine, strong silk. The trees make excellent timber and are prolific fruit-bearers. The aromatic and juicy berries are often more than an inch long, one half inch in diameter, and vary in color, from jet black to light red. The fine fruit more than pays for the labor and expense of growing these trees. All the varieties of mulberry trees mentioned are hardy, grow rapidly, attain a hight of twenty or thirty feet, and make beautiful shade trees.

A Pig-Pen in the Pasture.

The pig pasture should be near the house for convenience in feeding. But wherever located, it should have a good pen for feeding and shelter. A pen is an economical arrangement in the matter of feeding alone. When pigs are fed on the ground much of their food is trampled into the ground and wasted. Loose troughs placed in the open field are insecure, and the strongest hogs usually get more than their share if they do not succeed in overturning the whole mess. It is a bad policy to leave pigs exposed to all sorts of weather, even during the summer season. When animals seek the poor protection of a fence or a tree, one can easily understand that shelter is needed. Farm animals are good guides to follow in supplying their wants in this respect. A shelter should be provided that will exclude cold rains, frost, and the hot sun. This may be done at small expense. Two or three



A CHEAP PASTURE PIG-PEN.

hundred feet of lumber and a few hours' labor, will erect a pen that answers all the wants of the case. The accompanying cut represents such a pen situated on the line of the pasture fence, with feed spouts accessible from the outside of the pasture.

The frame for this pen is made by setting posts in the ground, and spiking sleepers, girts, and plates to them. These posts should be of some durable timber, cedar and tamarack are excellent for this purpose. Any timber may be made more durable by pouring hot tar over the portion that is to enter the ground. The posts should be set about three and a half feet in the ground. Where the boards are put on horizontally, no girts are needed. Plates or overlays spiked to the end posts, and extending the length of the building, are needed to hold the roof boards, which run up and down, and are battened with narrow strips.

Common lumber is used throughout, the best of the lot being selected for the roof boards. A door is provided at each end. The trough is located at the front of the building, and the spout empties into this at a convenient hight from the ground. Nesting places are in the rear of the enclosure, and the whole has a tight floor upon which corn may be fed without waste. If it becomes necessary to change the pasture, this building can be easily taken down and removed. It is a good plan to have two small pastures for calves and pigs, provided with shelters of this description. The animals can then be changed without the tearing down and erecting of shelters. Calves need shelter fully as much as the pigs, and about the same plan will answer for both. W. D. BOYNTON.

Budding Forest Trees.

A. S. FULLER.

The propagation of woody plants by the process known as budding, consists in taking from one tree or shrub, a bud and transferring it to another. The plant upon which the bud is placed is called the stock. The limits of this operation are not very well defined, but for all practical purposes I may say that it is limited to the members of the same genus, or closely allied plants; that is, oaks may be budded on oaks, chestnut on chestnut, and generally the nearer related the species, the more successful the operation. But like all other rules pertaining to the propagation of plants, there are exceptions, and occasionally we may find that the wood of two species belonging to the same genus, cannot be made to unite and form what is termed a union. There is always a preference in stocks belonging to the same genus, and the propagator seeks the best for his purpose. I may say, however, that as a rule, the weak and feeble growing should always be placed upon the strong growing, if rapid growth and long life is the object in view.

Budding is usually performed in summer, soon after the buds or a portion of them are fully developed on the young wood of the present season's growth. The stock into which the buds are to be inserted must be in a similar condition, although the stem or branch at the point of junction may be more than one year old, but in no case must the bark be so thick and rigid, that it cannot be readily separated from the wood beneath, because the bud is to be inserted under the bark of the stock, and unless this can be done, the operation will fail. We have to depend upon the assimilated or true sap to form a union between the bud and the stock, the same as we do on layers and cuttings to produce roots, for all the operations are analogous, only in budding, the alburnous matter forms a union with the same material in the stock, while in the layer and cutting, it is emitted in the form of roots.

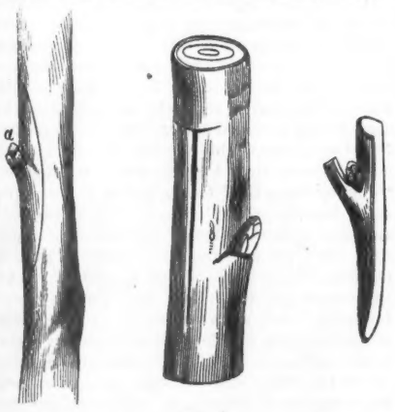


Fig. 1. Fig. 2. Fig. 3.

The proper time for budding trees must, of course, vary with the latitude, season, and kind of trees to be propagated, as some come forward earlier than others, but, as a rule, it may be performed as early in the season as good plump buds can be found at the axils of the leaves in shoots of the present season's growth. The upper and immature ones can, of course, be discarded, if it is necessary to commence budding before all are in fit condition to use. In fig. 1, *a*, we have a bud which is to be transferred to a stock; a knife is inserted about one inch below it and passed upward, and brought out about a half inch above, cutting out a piece of bark with a thick slice of wood of a form shown by the circular line in the figure. We now make a cut across the stock, cutting just through the bark, and another longitudinally downward, as shown in fig. 2, then insert the lower end of the bark containing the bud, under the bark of the stock at the point where the incisions meet, and press it down to its place. If the bark of the stock is firm, and does not part easily to admit the bud, the edges must be lifted so as to allow the bud to pass under it freely. If the piece of bark containing the bud does not pass completely under, then cut it off at the upper end even with the cross-cut in the stock, so that it will fit in smoothly. In fig. 3 a bud is shown, taken out after the upper end has been cut off, as directed, and on this is also shown a portion of a leaf-stalk, usually left attached for convenience in handling the bud, as well as to protect it from injury. After the bud is inserted, it is secured in place by a ligature, which may be of bass bark, a strip of thin cloth, woollen yarn, or any similar material that will hold the bud and bark in place, until a union is formed. The point of the bud and leaf-stalk attached should, of course, be left exposed. The stock into which a bud is inserted should not, as a rule, be over an inch in diameter or less than a half inch, although much larger and smaller are often used. After the bud has firmly united with the stock—which will usually be in two or three weeks—the ligature should be loosened or removed entirely. The bud is not expected to push into growth until the following season, at which time the stock above the bud should be cut away and the bud allowed to grow undisturbed. If sprouts appear on the stock they must be removed, in order that all the strength may go into the bud. The horizontal incision in the stock is sometimes made below or at the bottom of the perpendicular one, and the bud thrust under the bark, but upward, or the reverse of the more usual method, this permits the downward flow of the sap to reach the bud in a more direct course than when the cross-cut is made above it. It is not a convenient method, but is sometimes desirable when the flow of sap is rather sluggish late in the season.

Fig. 4.—TAKING OFF THE BUD.

When a bud is taken from the shoot in the usual way, there is a small slice of wood remaining under the eye, which, in budding some kinds of plants, it may be desirable to remove, although it is an almost universal practice in this country to allow this wood to remain, and doubtless in a majority of cases, it is best to do so; but there are instances where a more permanent union will be secured if it is removed. With kinds of trees like the magnolias, horse-chesnuts, and common sweet chestnut, that have a rather thick bark on the young shoots, better success will be attained by the removal of the wood from the bud. When this is to be done, the shoots used must be in a condition to allow the bark to peel readily from the wood, without tearing or breaking the fibers. Hold the branch in the left hand, with the smaller end towards you; insert the knife-blade about one inch below the bud, cutting a little deeper than you would if the wood were to be left in, pass the knife under and above the bud, some three-quarters of an inch, but not out to the surface; withdraw the blade, and cut across through the bark only about half an inch above the bud, then with finger and thumb lift up the bark, at the same time press it gently forward, and you will remove the bark and bud (fig. 4) *a*, without injuring it, leaving the piece of wood *b* adhering to the branch. This is a much better and more scientific method of removing the wood than to pick it out with the point of a knife, or to remove with a goose-quill as sometimes recommended. This concave piece of bark, with the bud attached, will fit the convex surface of the stock very closely, and on large stocks, and with buds from large shoots, taking out the wood is often advisable.

Another style of budding called the annular, and represented in fig. 5 may be practised in summer on small shoots of the season's growth, or in spring, so soon as the bark will peel readily from stock and cion. It consists in taking a ring of bark with bud attached from one tree, and after a similar ring is removed from the stock, the former is fitted into its place. This ring of bark may be an inch wide and fitted to stocks from the size shown up to an inch or more in diameter. It is always best to have the ring of bark wide enough to admit of placing ligatures around the stock above and below the bud, in order to hold it in place. When performed in spring, it is best to use waxed strips of cloth, to cover the wound and exclude the air, but late in summer and with bark from shoots of the present season, strips of bark such as used for ordinary budding, will answer for ligatures. In this style of budding, the branch from which the ring of bark is taken, should be nearly the same size as that of the stock to which it is affixed. In performing these operations an implement called a budding-knife is required, and they are made of various sizes and patterns, and are usually to be obtained at almost any seed store. The imported budding knives have usually either a thin, blunt-pointed ivory, or bone handle, or a piece of bone inserted into a horn handle, this being used to lift the bark of the stock, to facilitate the inserting of the bud under it. Many gardeners and nurserymen still use these old forms of budding knives, but they are clumsy affairs, and not adapted for rapid work. Any pocket knife with the blade rounded, and made thin and smooth, will answer.

Fig. 5.—ANNULAR BUDDING.

TOBACCO STEMS FOR CURRANT WORMS.—Mr. A. P. Kinney, Jamaica Plains, Mass., writes us as follows: "In 1881 I came to this place, and found twenty-eight large currant bushes, that were in a very bad condition on account of the currant worms. The neighbors said that for eight years the fruit amounted to nothing, the leaves being destroyed every year. In the spring of 1882, tobacco stems were applied as a mulch, at the rate of ten pounds to each bush, and a handful scattered through the branches. The foliage was not troubled by the worms. In 1883 only five pounds of tobacco stems were used per bush, and the leaves were not destroyed. This year I shall use only half the last amount, and believe it will be sufficient."—Any currant grower who can readily get tobacco stems, should try this remedy for currant worms.

The Southern or Deciduous Cypress.

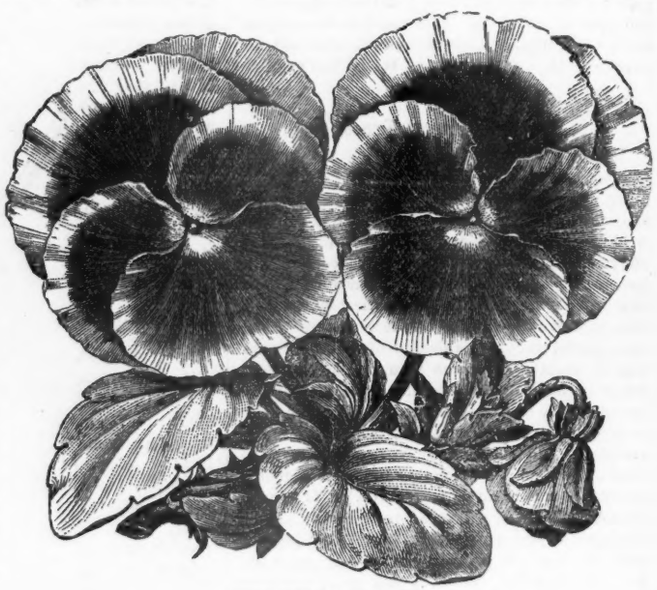
Few of those who read of the great beauty and remarkable aspects of the cypress swamps of the Southern States, are aware that the cypress tree will

Fig. 1.—CYPRESS BRANCH AND CONE.

flourish on dry land, and that it is hardy in localities far north of those in which it grows spontaneously. The lower portions of Delaware and Maryland are its northern limits in the wild state, but it is hardy throughout the Northern States, save in localities with exceptionally severe winters. There is a fine group of these trees growing upon the edge of a marsh, within a few miles of New York City, and the writer has a tree about the same distance from the city in another direction, which, upon the sandiest of soils is a fine specimen of vigorous growth. According to Bryant, the tree is hardy in Northern Illinois, notwithstanding the growth is checked by the severity of the winters. Though

Fig. 2.—A LARGE SOUTHERN CYPRESS TREE WITH MANY "KNEES" (*Taxodium distichum*).

belonging to the conifers, this Cypress is not an evergreen, but, like the Larch, sheds its leaves in autumn. In its native swamps the tree reaches one hundred and twenty, and sometimes, even one hundred and fifty feet in hight. The trunk is remarkable for having an immense base, which for four or five feet from the surface is of double the diameter that it is above. As it grows in the swamps, the trunk is clear of branches for the greater part of the hight, and bears at the top a flattened, wide-spreading head. But in cultivation, with abundance of room to develope, the trunk is well-clothed with branches, which form a handsome pyramid of verdure. The foliage of the tree is especially light and graceful. The small leaves, not exceeding an inch in length, are arranged along the slender branches in two rows, like those of the Hemlock (hence the specific name, *distichum*, two-rowed). The leaves, shown in figure 1, are of a peculiar light and tender green color. To look up at the bright sky through the spreading branches of a cedar swamp, presents a play of colors long to be remembered. In autumn the leaves turn to a dull red color, and soon after fall. The cones of the shape shown in figure 1, are about an inch in diameter and contain numerous small seeds with narrow wings. A marked peculiarity of this tree is shown in figure 2. When, in its native swamps, having reached the hight of twenty to twenty-five feet, there arise from the roots numerous woody, conical excrescences, which in old trees are produced at the distance of thirty feet from the trunk. These are popularly known as "Cypress knees." According to Bartram, these are four, five, and even six feet high, and from six inches to two feet in diameter at the base. They are covered with a smooth bark, and are always hollow. In localities where they occur, these "knees" are made use of as bee-hives, buckets, troughs, and other domestic utensils. Of what use these "knees" are to the tree is not known; they have never been found to sprout, and thus serve to propagate the tree. The wood of this Cypress has a fine grain, and when exposed assumes a pleasing, reddish tint; being strong, elastic and easily worked, it is regarded as superior to that of any of the pines, and when obtainable, is preferred to the White Pine for all the uses for which that wood is usually employed. The wood is remarkably durable, and is highly valued for fence-posts. Shingles made from it have lasted forty years, and the shingle manufacture is an industry of considerable importance. Hogsheads for sugar and molasses are made from the wood. The timber has so many valuable qualities that experiments should be made to ascertain how far North its culture may be profitable. As an ornamental tree it takes a place in the front rank. The tree is raised readily from seed, and grows rapidly while young. Several years ago, Mr. A. S. Fuller suggested to grape-growers, that they could provide themselves with excellent and durable stakes, by sowing the seeds of this tree. A tree for sometime grown in the nurseries as the Weeping Deciduous Cypress (*Glyptostrobus pendulus*), and highly valued for the lawn, and as a street tree, is now regarded as a form of our Southern Cypress.



NEW GERMAN PANSIES.

The Pansy—Why Not More?

If there is a generally popular flower, it is the Pansy. In the old gardens it was something like a weed; the plants from self-sown seeds produced a few small flowers, quite unlike the improved sorts of the present day. The popularity of the Pansy in England, is shown by the fact that it has some twenty common names. Some of these have found their way to this country, and we have the flower known in old gardens as "Hearts-ease," "Johnny Jump Up" (corrupted to Johnny-jumper), "None-so-pretty" (often "Nancy-pretty"), and some others. Whether our improved Pansies were derived solely from *Viola tricolor*, or by crossing with other species, is a point upon which florists are not agreed. It is of little consequence so far as their cultivation is concerned. Our climate is not favorable for the cultivation of the Pansy. If the seeds are sown in the open ground in spring, by the time the plants are large enough to flower, the weather is so hot that, no matter of how good a strain the seeds may have been, the flowers will be starved and small. To have fine results, we must have our plants ready to flower either before hot weather in spring or after the intense heats are over. Consequently, for the early bloom, we must sow the seeds in a window-box or frame in March, and for a late flowering, the seeds should be sown in a partly shaded place in August or September. To have good Pansies, we must have rich soil, and whether raised in spring or fall, the seedlings can hardly have soil that is too rich. The catalogues offer different strains of seed. A catalogue before

us of a German specialist, gives some twenty distinct varieties that he has produced. We can only say, get good seeds and give good culture. Though usually treated as an annual, the Pansy is really a perennial. Any plants producing especially fine flowers, may be readily propagated and kept in cultivation as long as may be desired. The side shoots of thrifty plants, taken as cuttings, will strike root readily, and soon form flowering plants. Those who wish to excel in Pansy culture, will find it best to grow the plants in cold frames, where they may be protected from the severity of our winters, and be shaded from the intense heats of summer. The engraving shows the general appearance of what are known as the "New German Pansies," which present a great variety of strikingly beautiful colors. The Belgian Pansies, with large and beautifully marked flowers are also very fine. We know of no other flower that promises the cultivator such rich returns, with little labor, as the Pansy.

A Good Word for the Parsnip.

The parsnip is far from being popularized, though much older than the potato. It is a prime cattle food, good for beef and milk, and greedily eaten by swine. Potatoes are everywhere; they will grow about as plenty as corn and wheat. But the parsnip is the exception rather than the rule, even upon the farmer's table. A small patch is raised, of a bushel or two, if raised at all, to be dug in the early spring for a change of diet. It is a wholesome and appetizing vegetable, and could be used to advantage for half the year. We begin to use them fresh dug from the bed in October; and before the ground freezes them in, lay in a store of several bushels for winter use. In the spring we dig the reserve, and have parsnips until June. They are a dainty dish, stewed, and still better partially boiled, and then fried brown in long slices. A good crop can be had sown any time before June.

A New Branching Broccoli.

When we see, as was the case last spring, Brussels sprouts all the way from France offered in our markets, and know from our own experience that these are as readily raised as any other kind of cabbage, we think it time that our market gardeners should wake up and supply all needed garden products of home growth. It is almost ridiculous that Brussels sprouts should be imported to supply the demands of the New York market. Another form of cabbage which our gardeners almost ignore, is Broccoli. This is far more certain to head than cauliflower, and is by many esteemed as equal to

THE BRANCHING BROCCOLI.

that form of cabbage, usually so difficult to raise. Broccoli is common in European markets, and though we have not known of its importation, we should not be surprised to meet with imported Broccoli on the market stalls at any time. Among the Broccolis are some white varieties that can hardly be distinguished from cauliflower, though the hardiest kinds have a more or less purple color. A new variety has recently met with favor in France, called Branching Broccoli (*Broccoli branchu*). This, instead of forming a compact head, like the Broccolis, pushes out shoots as shown in the engraving. These shoots are cut while still tender, and before the flower buds upon them expand, are cooked in the same manner as asparagus, and are highly esteemed. The plant is also called the Asparagus Broccoli.

Lettuce Mildew.

Mr. Gus. Knock, Detroit, Mich., is troubled with a rot, affecting lettuce in the green-house and hot-beds. He writes us: "It started about six weeks ago at a time when we had no sunshine for two weeks. When warmer weather came it stopped spreading; but is now starting again on the larger lettuce. It makes a kind of web."—Mr. K.'s trouble is a mildew, from which market gardeners in some localities have suffered severely. This mildew is a near relative of the one infesting the grape-vines. When the mildewed lettuce is examined with a hand-lens, the white substance is seen to be a minute forest of small stems and branches. The mildew threads run through the substance of the lettuce leaves, afterwards come to the surface and form the branches, upon which multitudes of spores are borne. The mildew robs the lettuce of nourishment and causes it to decay. The infested leaves soon drop and become a rotten mass. Flowers of Sulphur has proved an effective remedy for the grape-mildew. This would doubtless help in staying the ravages of the lettuce mould, but the foliage is the portion eaten and, unless thoroughly washed after dusting with sulphur, it would not be agreeable to the taste, to say the least. Lime sprinkled upon the mildewed plants has proved effective. Several large lettuce-growers have found it to their interest to give up growing this crop for a few years, until the germs of the mildew were eradicated from the soil by starvation. It is a well-known fact, that all these mildews are plants of a low order, and continue their species by the production of countless spores. These spores perform the same physiological function that is assigned to seeds among other plants. Mildews thrive in a warm, moist atmosphere, conditions which obtain in a green-house or hot-bed. In general, the circumstances most favorable for the rapid growth of garden and field crops are the best for mildews. The same is true of rusts and smuts too frequently infesting the wheat, oat, and corn-fields. Much, therefore, depends upon the weather, and this is not under man's control. The best that can be done is to use all possible preventive measures. If the hot-bed or green-house is foul with mildew, or other fungus germs, let it be thoroughly cleaned. With a hot-bed it will probably be the quickest way to build a new one on clean ground. The problem of how best to meet and conquer the many fungus pests of the farm and garden is a serious one. The rusts, mildews, moulds, smuts, blights, etc., are so very minute and hidden from ordinary sight, that their destructive work is usually done before the presence of these microscopic pests is observed.

Liver-leaf—or Hepatica.

One of the earliest flowers to be met with in rich woods in spring, all the way from Maine to Florida, is the Liver-leaf. It is sometimes called Liver-wort, and unfortunately so, as that name properly belongs to an order of flowerless plants. The Liver-leaf has long been known as Hepatica. The ancient "root and yarb" doctors supposed that plants indicated by some character, the diseases they would cure. Thus a plant with hard, strong seeds would be good for stone in the bladder; another with peculiarly speckled leaves, was for lung-diseases, and

THE GREAT HEPATICA (*Hepatica angulosa*).

the Liver-leaf, having a fancied resemblance to the liver in shape, was called *Hepatica* or Liver-leaf. It should be said by the way, that this modest little plant is quite harmless, and was never known to interfere with the liver of any one. Those eminent botanists, Bentham and Hooker, in their great work revising the genera of plants, finding no reason for keeping *Hepatica* as a distinct genus, have united it with *Anemone*. In a popular article we speak of the plants as Hepaticas, as they will long be known by that name in garden literature. As met with in the woods, the Liver-leaf has a tuft of leaves which, in the most common species, have three blunt lobes, *H. triloba*, but in some localities the lobes of the leaves are pointed, and this is regarded as a distinct species, *H. acutiloba*. The flowers, appearing soon after the snow melts away, have a peculiarly bright and cheery look. In the wild plants they are usually pale blue, but they present considerable variety, from pale purple to white, and occasionally pink flowers are met with. The common Liver-leaf (*Hepatica triloba*), is a native of Europe as well as of our own country, and European

florists have double forms in all colors from white to dark blue. Anything more beautiful than these double varieties is difficult to imagine. The com-

Fig. 1.—HOUSE COVERED WITH CREEPER.

mon single Liver-leaf is worthy of cultivation, on account of the earliness of its bright flowers, while the double ones are most exquisite, and well worthy of the trouble required in selecting for them a partly shaded place. Still more beautiful than our native species is the Great Hepatica, as it is called in English gardens. This (*H. angulosa*), is a native of Central Europe. The plant, its aspect at flowering being shown in the engraving, is much more robust and larger than our common species. Its flowers on strong stems, are twice the size of the other, and of the most "heavenly" blue. Some plants that had been kept in a cold frame during the winter, bloomed most satisfactorily with us this spring. It does not appear difficult to manage, and we hope it may prove to be a plant that we can commend for general cultivation.

The Use of Vines and Climbers.

No other woody plants can be made to produce ornamental effects so quickly as the various climbers. Their use upon porches and verandas as well as upon the house itself, has been frequently advocated in these columns, and we now would illustrate their employment in the grounds and in several ways as suggested by Mr. Elias A. Long. Very full lists from which to select are given in the

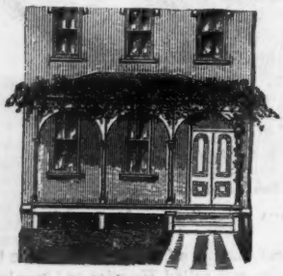


Fig. 2.—BITTERSWEET ON VERANDA.

catalogues, while two of the very best, so far as foliage is concerned, may be had without any expense beyond that of digging, as they are common over a large portion of the country. The two vines referred to are the Virginia Creeper (*Ampelopsis quinquefolia*), already planted to some extent, and the Climbing Bittersweet or Wax-work (*Celastrus scandens*), a vigorous grower with rich, dark-green foliage, and showy berries. This is a valuable climber, but is rarely seen in cultivation. Figure 1 shows how a very plain looking house may be improved by planting a Virginia creeper; figure 2 represents a veranda, along the edge of the roof of which a climbing Bittersweet has been trained. It may be well to give a caution here against allowing this vine to run upon trees. It winds itself around the branches with such force as to constrict them and check their growth, and if not removed will ultimately kill them. The manner in which vines can be used to cover gate posts is shown in figure 3, where, by the aid of the shears, the caps to the posts are kept in a rounded shape. A very pleasing fence to separate the ornamental portion of the grounds from the vegetable gardens and for other uses, is suggested in figure 4; posts are set at the desired distances apart, and connected by strong galvanized wire, and a Virginia creeper planted at each post. A little care given occasionally to training the vines along the wires will soon result in beautiful garlands of verdure. Figure 5 shows an archway leading to another part of the grounds. The frame-work of the arch may be made of saplings or other materials, which the vines will soon cover and conceal. The manner of draping a rustic archway of rough stones is illus-

Fig. 3.—VINES ON GATE POSTS.

Fig. 4.—A VIRGINIA CREEPER FENCE.

trated in figure 6. A very effective arbor may be made by constructing a frame or skeleton, as in figure 7, supported by posts at the corners. A vine at each post will convert the structure into a picturesque and pleasing embellishment. Such a frame-work for an arbor needs to be made strong, as it will have to support a great weight of foliage in summer, especially during rains.

Pruning and Thinning in the Pear Orchard.

BY A PRACTICAL GROWER.

It requires more common sense than art to prune properly. It is foolish to endeavor to make trees of many different varieties, conform to one style of growth. A tree, which is spreading in its nature, can not be made to adopt a pyramidal form. Remove interfering and dead branches, and shorten in wherever necessary. A little practice will soon enable a careful, intelligent man to do the work properly, and it is seldom that much wood need be cut away, especially if the pruning has been regularly done every year. To make the head more shapely or better balanced, it may be necessary to remove one or more limbs. This should be done with a fine, sharp, saw, after which cut the wound smooth and clean with a sharp knife, and cover it with a thick coat of good paint, to prevent bleeding, and to protect it from the influences of the atmosphere. Always use sharp instruments, and make clean cuts. As a rule, pruning shears are preferable to a knife. Carry a small stone in the pocket, for sharpening the knife or shears when the edge becomes dull. Thinning the fruit is most important. It costs no more to market a basket or crate of choice fruit, than that of inferior quality, while the price of the former is very much higher, and the sale quickly made. Nearly every fruit tree, when growing vigorously, sets more fruit each bearing year, than it can possibly perfect, and if the trees are permitted to carry it all, not only will the fruit be inferior in size and quality, but the trees may be injured. By thinning out the fruit properly, nearly or quite as much fruit in weight or measure, is secured, while the size and quality is of the best. Make three careful thinnings of the fruit. The first thinning is done about a week after the blossoms have fallen, removing about one-fourth of the fruit, the smallest being taken. Two to four weeks later, the trees are again gone over, and one-fourth of the remaining fruit removed, as before, selecting

Fig. 5.—AN ARCHWAY OF VINES.

the poorest and smallest. Three or four weeks later, about the same per cent of the poorest specimens are removed. Leave enough fruit on the trees to make a good, heavy crop. Those who have never tried thinning out fruit in the orchard, will be much surprised at the good results.

Edgings in the Flower Garden.

The old-fashioned box-edging, with which the outlines of beds were formerly marked is now rarely seen. In northern localities it dies out in a severe winter, and unless taken up, divided and reset, it soon has an overgrown, shabby look. An excellent edging for a bed in the lawn, is ivy—the true European ivy. It may be kept pegged down closely and neatly trimmed, and forms, with its dark-green, a fine contrast with the grass on one side, and the flowers in the bed on the other. Another climber was used with very good effect on the grounds at the Centennial Exhibition—the Gold-netted Japanese Honeysuckle. This holds its

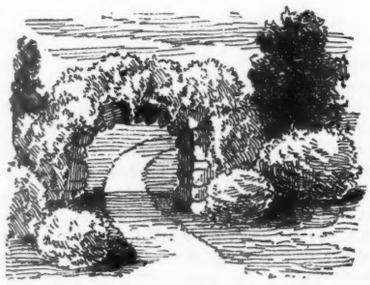


Fig. 6.—A RUSTIC ARCHWAY.

variegation admirably, and if trained on a low wire frame, makes a very showy edging. Another excellent edging plant is the Japanese *Retinispora plumosa aurea* of the catalogues. It grows readily from cuttings, and bears any amount of clipping. There are also some other forms of Arbor-vitæ, to

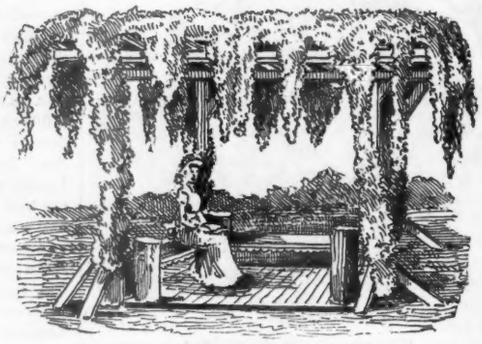


Fig. 7.—A CHEAP SUBSTANTIAL ARBOR.

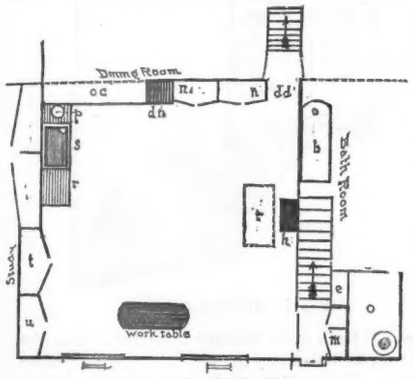
which the Retinispora really belongs, that may make serviceable edgings. The main point is to have a pleasing shrub, that will not be injured by the necessary pruning.

THE HOUSEHOLD

A Kitchen.

J. P. ROBERTS, PROFESSOR OF AGRICULTURE, CORNELL UNIVERSITY.

Among the many valuable suggestions for planning houses, given by the *American Agriculturist*, I have seen none for a kitchen complete in itself, that is, including pantry. I send a description of one which has been in use sometime, that appears about as near perfection as we can get anything. It is twelve feet square, exclusive of cupboards, has one hundred and forty-four square feet of shelving, all protected by doors from flies and dust; all within easy reach, and so divided that oranges and butter, milk and kerosene, may be kept separate. It is arranged to economize both steps and room, and have everything convenient. The rear entrance door *d*, *d*, is shielded from the outside gaze by the stairing in front of it. At the right is a meal chest *m*, with a double door cupboard above for lamps, etc., and has twenty-four square feet of shelving. The bath-room, containing the bath-tub *b*, is separated from the seat-room *o*, by a curtain. This room opens into the furnished bedroom on the right, and has an outside door and window for ventilation. At *e* in *o* are two drawers. Above the range *r*, is a large galvanized hood *h*, with a ten-



PLAN OF A KITCHEN.

inch pipe entering the chimney. This is just high enough to clear the head, and carries off steam and vapors rising from cooking.* The range has a water-back for supplying hot water to wash-tubs and sink. The door, *d*,*d*, leads straight ahead to the cellar; turning to the right you pass down the hall to the front door; to the left you pass through a door to the dining-room. This latter door swings both ways, and is always kept closed by springs. At *d*,*n*, is a dumb-waiter for bringing articles from the cellar; but when standing on a level, it furnishes a passage way by its shelves between the kitchen and dining-room, for passing dishes and food. On the right of this are two cupboards, *n*,*n*, with doors; these contain twenty square feet of shelving. On the left is the china closet, *c*,*c*, opening into the dining-room, at the dotted line. It has twenty-five square feet of shelving and two drawers. At *p* is a pump; *s* the sink, and *r* a drip board for draining dishes. Under these there is a closet for kettles, etc. On the back of them, on the other side of the wall, is a large book-case, opening into the study. At *t* and *u* are two large cupboards, built like the rest in the wall. These supply seventy-five square feet of shelving, and a place for a refrigerator.

*NOTE ON THE ABOVE.—The "Hood" over the range is a very good thing in theory, and sometimes in practice. We have seen them frequently, and found them failures in most cases, except where the escape pipe is in a separate flue from the smoke pipe of the range. Unless the chimney has a strong draft, the open hood pipe checks the flue too much. In any case a close-fitting slide or damper is needed to close the opening when starting a fire, and when from the direction of the wind or other cause, the range fire does not burn quickly enough.—ED.

Summer Notes on Dress.

The furs and woollens, which have made the long, cold winter endurable, should have been packed away weeks ago, before the mischievous little moths, whose works of darkness are so destructive, appear, which is at about this time. Moth powders, cedar shavings, tobacco, borax and camphor, are all good to pack with these winter articles, but if they are well shaken in the fresh air, and carefully folded in brown paper, or even newspapers, so well pasted that not a pin hole is left open, they are safe. Of course, some woollen clothing is needed through the summer months, in this variable climate of ours. One flannel suit is indispensable, for ladies and children, and often at the sea-shore, or by the mountains, it will be the dress most needed. The best materials are cashmere serge, and fine, smooth, lady's cloth, in écru, gray, golden-brown, and new shades of blue. These are used very much for bride's travelling dresses, and are tailor-made, which means that they are cut by tailors, to fit perfectly to the figure, and simply stitched, or bound with mohair braid. A vest of the same material is sometimes added, buttoned with small, flat, lasting buttons. These are imitated in the less expensive fine flannels, ottoman cloths, etc. For those who prefer, these come in stripes, checks, blocks and plaids, and are used for the skirts and sashes of children's dresses, with plain, Jersey waists, of brown, red, blue or black. Skirts of white muslin, or piquè, are worn by little girls with these Jerseys.

The various cotton fabrics, muslins, cambrics, satteens, and many others which now come in such pretty patterns, that we look at them as we look at a painting or embroidery, are expensive in the end—as the sun, and salt sea-air, will fade the choicest colors, and dampness destroys their beauty, and then the trouble and expense of having them "done up" is an important consideration. Besides the summer flannels already mentioned, there are inexpensive buntings, and nun's veiling, from thirty to fifty cents a yard, each of them a soft, thin, coarse-meshed woollen fabric in all the new shades, and are very desirable, as they will endure a long service without much care. White nun's veiling was worn very much last summer, and will doubtless be very popular this season. It can be made dressy enough for any occasion, by trimmings of silk-surah, satin, or velvet ribbons. Pale pink is also very pretty with golden-brown ribbons. Wrappers of all materials are made with a yoke, and the whole front and back gathered to it, falling loosely to the floor. This is comfortable, and for a lady's own rooms desirable, but it has too much the appearance of undress, and to walk through the street, even in a quiet, country town, in this costume, as we have seen some do, is, to say the least, unlady-like. Bonnets are little changed from last year. Figure 1, shows a child's brown straw hat faced with golden-brown velvet, loops of golden-brown ottoman ribbon on the left side with a small

Fig. 1.

Fig. 2.

bunch of dandelions. A child's mixed straw hat is shown in figure 2. It may be either blue and white, or cardinal and white, faced with velvet to match; bows of ribbon and two small wings trim the outside. Figure 3 shows a lady's black chip bonnet, trimmed with black and gold-colored ostrich tips. It has black lace strings with gold spangles. The small capote, or little, round, close-fitting bonnet, is so becoming that ladies do not like to give it up, even for the sake of "a change." It should match the walking dress, and the trimming of flowers may be so well chosen, that it can be changed from one to another foundation to suit the dress. It would seem that every known flower, leaf, or grass, is represented artificially. Many that are unknown, must be the creation of artists, whose utmost skill must fail in efforts to compete with the great Father, who gave the flowers life. These are bunched together on the top of the bonnet, or a little to the left side. Among the novelties for trimming are bunches of garden vegetables and fruits, plums, apples, etc. Ribbons are used two inches wide for strings. The fronts have puffs of satin or velvet, and some have wreaths of fine flowers all around. Gold and silver tinsel and spangles are used on black lace bonnets with good effect. Gilt wire frames are used also. Hats are little worn by ladies beyond forty years of age, excepting shade hats. They are of a high crown shape, with round, flat brim, and are trimmed with a bunch of feathers or flowers, on the left side. Some are turned up on one side. Bonnets and hats are of all colors and some straws are gilded, and bronzed. Those trimmed with black lace and flowers are very pretty. Jet, for all trimmings, is worn more than ever. There are exquisite patterns of jetted net, for scarfs, vests, basques, and also for sleeves, and open fronts to black silk dresses. The basques have of course a silk lining, which may be high or low in the neck. Belts are worn with round, full waists, for wash dresses, with clasps of old silver jewelry, to represent old silver coins, which are very fashionable in pins, collar-buttons and bracelets. Another old fashion revived is mahogany furniture, and many old, rich articles, long considered "out of date," will be found of great value, as this wood, like a lovely character, grows more beautiful with age. ETHEL STONE.

Fig. 3.

Fashions in Letter Paper and Cards.

Though plain white writing paper, especially the heavy English kind, is not entirely out of date, very many prefer the tinted, or with an odd design in the corner, and sometimes covering the entire outer page, as a fine-spun spider's web, and there are dozens of styles to select from. "Ragged-edged" paper, which has had a run for a year or more, is still seen, but "scorched paper" is newer, and promises to become very fashionable. The edges look as if held to the fire until slightly browned. This is more curious than pretty; but eccentricity rules the hour, and anything novel takes at once.—"Wood paper" is another popular style, imitating the grain and color of birch-bark, maple, pine, and other woods. This has the head of some animal on both sheet and envelope, as a deer, dog, or horse.—"Robin-egg-blue" paper is very tasteful, and often has painted or stamped in the upper left-hand corner a pretty little bird's nest containing four tiny eggs, with a robin redbreast perched on the side. But the daintiest design of all is a silver four-leaf clover with an ordinary pin run through it as though pinning it to the sheet.—Vellum paper is the handsomest and most expensive of any, and is a pleasure to write upon, while the vellum envelopes are exceptionally fine, particularly for invitations. They are now white, and are bound with delicately tinted satin ribbon, which is tied in a knot, and sealed with wax of the same shade. Fashionable people now always seal their letters, or more frequently apply the imitation crimson seals with an initial. These are made of paper waxed over, and come by the box. These are much less trouble than the old-time candle, wax and seal, which required considerable skill and practice, while these fasten a letter securely and give a style to the epistle.

Note cards are larger than formerly, and fold over, with a lap like envelopes; but those for af-

ternoon teas, are six by four inches. They are unique in smoke color, with a gold kettle in one corner and clouds of steam pouring from the spout. On the smoke is printed in zig-zag letters:

"Come to tea
At three
And see me."

Another pretty design for these "kettle-drum" invitations is a gaily illuminated cup and saucer, with "five o'clock tea," inscribed underneath. The date and residence are written in the right-hand corner, and the hostess' name in the left.—Visiting cards for ladies are very large now, and those for gentlemen very small. The name is engraved in the plainest script, and the address and reception-day placed in the lower right-hand corner.

Pretty *sachets* come for perfuming writing-paper, made of rose or violet powder, sprinkled in a fold of cotton batting, and covered with two contrasting shades of ribbon, with a bow in one corner. These are questionable luxuries; as a general thing, scented note-paper is now considered vulgar.

Cockroaches and Croton Bugs.

The great pests of the house-keeper, especially in cities and seaport towns, are the cockroach and the Croton bug. Many suppose that the latter, from its smaller size is the young of the other, and we have often been asked if the two are not different forms of the same insect. There are several cockroaches, some of which lead an out-door life. The common cockroach is supposed to have come from some part of the East; its native country is not certainly known, though naturalists have named it the Oriental cockroach (*Blatta orientalis*). It infests ships and is thus carried all over the world. In England it is generally called the Black Beetle, though it is not closely related to the beetles. Cockroaches feed upon almost every animal and vegetable substance, and are very destructive. Articles of food that they do not devour they render ill-smelling and worthless. They give off by the mouth a dark-colored liquid which has a most disgusting odor, and this is imparted to articles kept in places when the insects are numerous. Though universally detested, the cockroach has some things said in its favor. It is very fond of another domestic pest, the bed-bugs, catching and devouring them with avidity; on this account they are sometimes tolerated on board ships as the lesser of two evils. The female insect (fig. 2), is distinguished from the male (fig. 1), by the imperfect development of her wings; the engravings show the difference in this respect. The manner the cockroach deposits its eggs is quite different from that of other insects, and is an interesting point in its history. For insects to cement their eggs together into a mass, after they are laid, is not unusual, but the female cockroach deposits hers already inclosed in an envelope or egg-case. This, which is shown at *a* and *b* in figure 2, is about three-eighths of an inch long and half as wide. Its shape has been likened to that of an apple turn-over; it contains sixteen eggs. The female carries this case about with her for several days after it is laid, and at last, finding a suitable place, she glues it fast and leaves it. A few days after, the young insects are hatched and they make their escape at the straight edge of the case. In their early life the cockroaches are white, and do not assume their regular brown color until several days old. The insect called Croton bug in this country, it having become numerous in New York City soon after the introduction of Croton water, is in England known as the field-cockroach, as it lives out of doors as well as in houses. In Russia, Croton bugs are known as "Prussians." Its native country is uncertain, though its scientific name *Blatta* (*Ectobia* of some *Germanica* supposes it to be Germany. It is much smaller than the cockroach, and deposits its eggs in a similar manner, the egg-cases being only one-fourth of an inch long; they contain thirty eggs. Both these insects like dark, warm and damp places in which to hide, and the introduction of water into houses, especially where hot-water pipes run to every story, has greatly increased the number of such retreats and aided in the multiplication of these insects. Country houses may be freed of both insects with little difficulty, but city house-keepers, if they kill off all that are in the house at the time, will soon have it restocked by the neighbors. Various poisons for destroying the insects and different traps are in use, but nothing is so effective as Pyrethrum or Persian Insect Powder. This should be plentifully blown into every hole, crack and cranny. It will drive the insects, young and old, from their hiding places, and in a few minutes they will drop to the floor, some will die and others only will be stupified, and if given time will recover, hence all should be swept up and burned within a few hours. Another application of the powder should be made in about a week for the benefit of those that escaped, or may have hatched since the first. There is no difficulty in clearing an isolated house of these pests, if the use of the powder is followed up as long as any of the enemy are seen. All boxes, trunks and parcels brought into the house, especially those from a city, should be examined for these insects to prevent the founding of a new colony.

Fig. 1.—MALE COCKROACH.

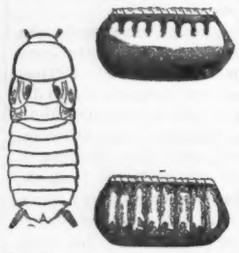


Fig. 2.—FEMALE COCKROACH AND EGG-CASES.

The Back-Yard.

EBEN E. REXFORD.

Many back-yards are abominations to the eye and nose. One finds in them all sorts of litter and refuse from oyster cans to old boots. Here the slops of the kitchen are poured to increase the odors which ought to warn every thoughtful person of the malarial influence breeding there, to break out eventually in fevers, or diphtheria. If any member of the family dies from one of these diseases, his death is probably lamented as a "mysterious dispensation of Providence," but the minister would say if he were to visit the back-yard, that death was caused solely by a violation of hygienic laws. A very strong argument against a dirty back-yard, is the spirit of deception which it is apt to foster in the young members of the family, for it is a constant deceit to present a clean and attractive front-yard to the gaze of the passers, while the back-yard is not fit to be seen. Children should be taught to be clean for the sake of cleanliness, and not because outsiders are likely to criticise them. The best plan is to have a hogshead or large box fitted up in one corner of the yard, and make it a rule to throw into this old cans, boots, broken dishes, and all such rubbish, and when there is a great accumulation, to bury or burn it. Do not allow anything to be thrown about. Have drains made to convey all slops entirely away from the house. Make good walks, and let the ground have a fine covering of grass, not weeds. Put up strong supports for the clothes line. Keep the fence in repair, and plant currant bushes near it. Set vines about the refuse barrel, and train them over it until it is hidden. If you have a receptacle for ashes, let it be something which can be shut up, not a row of old barrels to offend the eye, and give out a cloud of ashes every time the wind blows. Make it a rule to have the back-yard at all times as clean as the front one.

A VERY FINE OMELET.—Stir a tablespoonful of flour into one-quarter tumbler of milk to a paste, and mix this with three-quarters of a tumblerful of boiling milk, adding a teaspoonful of salt and a tablespoonful of butter, then set it aside to cool. Mince a little ham, and to each two teaspoonfuls add a teaspoonful of finely chopped parsley, and add it to the milk. Beat the yolks of six eggs very light, stir into the thickened milk, adding finally the whites of the eggs beaten to a froth. Cook in a greased skillet or pan on the stove.

Wall Cabinet.

Mr. "W. J. E.," Barclay, Kans., sends us diagrams of a cabinet of his own construction, and writes: It is very easily made by any one having a scroll saw. It has a more finished appearance than the one given in January (p. 24), and may suit some better. The shelf above, four inches wide, is convenient for bric-a-brac, or any small articles. The cabinet may be of walnut or any three-eighth-inch wood. Length of back and sides thirty inches, width of sides seven inches. Length of shelves twelve inches, with shoulders one inch long and one inch wide, having slots cut for pins, figs. 2 and 3. Ornament over the door two and a quarter inches wide.—The door is in one piece, sawed in panels with strips screwed to back to strengthen it and hold glass. One light of glass, ten by twelve, placed on back of the door is much more convenient than several small lights, and equally as good. All is fastened together by the wooden pins, except the back to door.—To lay out the ornamental pattern, cut a card or small piece of pasteboard in shape of an acorn or leaf and mark around it; you will then get the designs all alike.—The size may be changed to suit taste or convenience.

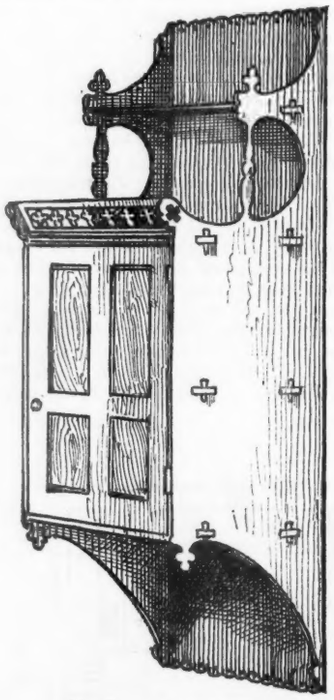


Fig. 1.—A WALL CABINET.

Fig. 2.—ORNAMENT ABOVE DOOR.

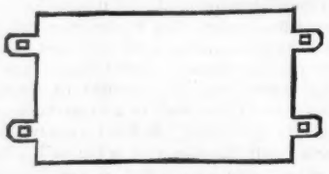


Fig. 3.—FORM OF SHELF.

More than Strawberries and Cream.

AGNES (CARR) SAGE.

"Oh, Flora don't!" exclaimed little Edith Raymond, with a distressed face, as she and her sister stood before the dressing-case in the spare bedroom, where they had come to view their new embroidered muslins in the long mirror. — "Why not?" asked Flora, turning round and round a sparkling diamond ring that she had taken from a small jewel casket.—"I think cousin Emily would lend it to me if she were here, and I should so like to wear it to the festival."—"But you might lose it or something," urged Edith, "and that would be dreadful, for you know how much our cousin thinks of that ring; she hardly ever takes it off, and must have forgotten it. Put it back, Florie."

But Flora hesitated, and consequently was lost. —"Nellie Barnes is so proud of that pearl her grandfather gave her," she said, "I would like to show her other people can also have nice things, and we are to be at the same table. I shall only borrow it, and cousin Emily need never know it, for she will not be back until to-morrow. That is," she added, "unless you see fit to tell her."—"I am not a tell-tale!" cried Edith, rather indignantly, and her countenance wore a troubled look as Flora hastily donned her hat and gloves, and ran down stairs with the ring still on her finger. But Edith had to hurry, and her disturbed thoughts were somewhat dispelled by her father, who met them at the door and handed each girl a bright two dollar-and-a-half gold piece to spend at the Fair.—"Thank you, thank you, papa!" they both cried, "we can buy lots of pretty things with this."—"See that you make good waitresses, and do your duty by the church," he said, and with a laughing rejoinder they ran gaily down the steps.

The Strawberry Festival for the benefit of the church was the great event of the summer in Blissville, in which old and young were all interested, while the girls considered it an honor to be chosen to serve behind the tables. This year the Raymonds were very happy, Flora having been selected for the refreshment table and Edith for the floral bower.

"I am so glad it is such a pleasant day," remarked the latter, looking up at the blue sky, "and the roses and strawberries are just in their prime."—"And it is so warm, we shall sell quantities of ice-cream," added Flora, "but do look at those forlorn little wretches!"—The objects thus described were a sallow-faced boy, with a pair of large, mournful, dark eyes, who was patiently turning the handle of a decidedly squeaky hand-organ, and a little brown monkey in a red coat, hopping briskly up and down to the doleful strains, occasionally stopping to circulate his small cap among the spectators gathered around.—"Poor things!" cried Edith, who was very tender-hearted. "I must give them a penny," and she darted into the crowd and dropped a coin in the tiny hat.—"You will be rid of all your money before you get to the festival," said Flora, as she came back flushed and breathless.—"No, indeed, I have my gold piece safe, and they did look so wretched I believe that boy is half starved."—"Nonsense! but here we are at the school-house and you must turn your mind from rags and monkeys to strawberries and cream."

A large room on the ground-floor of the village academy was the scene of the festivities, and it appeared very gay and attractive as the girls entered. The hall was decked with flags and evergreens, and fragrant with the odors of a thousand flowers, massed in the picturesque bower in the centre; while the tables were hardly less tempting with their display of fancy articles, beautifully frosted cakes, mounds of luscious scarlet berries, and pyramids of ice-cream. Flora was instantly taken possession of by her schoolmates and borne off to the refreshment board, where she soon had her hands full dealing out cream to the juveniles, who considered it the greatest treat of all. She had almost forgotten her borrowed plumes when Nellie Barnes, who was assisting her suddenly exclaimed: "Why, Florie, what a lovely ring! Where did you get it? Is it yours?"—The words brought the other girls crowding round to admire the stone, and fired a perfect blast of questions upon Flora, who found their inquisitiveness more than she had counted upon. She was ashamed to confess how she came by it, and parried the inquiries as well as she could, saying with a laugh: "Don't you wish you knew?" and "whose should it be if not mine? Do you think, Nell, you are the only one that can have a new ring?" although she felt at the time this was uncomfortably like a fib, and she had always prided herself upon her truth and straightforwardness.

"It is a beauty!" said Minnie Bell, "and quite throws Nellie's into the shade."—"But I don't make any mystery about mine," said Nellie, vexed by the remark, "and I am sure it is quite handsome enough for a little girl. My mamma would not allow me to wear diamonds."—"Sour grapes!" sneered Flora, turning away to supply a call for cake, but she sadly felt this disagreement with her "bosom friend," for the coolness increased and one thing led to another, until by evening both girls were chillingly polite, never addressing each other when it could be avoided, as is the fashion school-girls have of showing their displeasure.

Edith, meanwhile, was the merriest little flower-fay in the room, fluttering about the hall with her dainty nosegays, and selling more bouquets by her pretty coaxing manner and silvery tongue, than for the beauty of the flowers themselves. She was a general favorite, and had a bevy of boys and girls in her train wherever she went.—"I have sold all my flowers," she cried, about eight o'clock, coming up to her sister, "and oh, I have had such fun! but Florie, please lend me fifteen cents? I will pay it back out of my next week's allowance."

"What have you done with all your money?" asked Flora coldly, "you had as much as I did."—"Let me see," considered Edith, counting upon her fingers. "I bought a pin-cushion for mamma, and an apron for nurse, some candy for little Dottie Ellis, and a bunch of violets for poor lame Ned Carter. I believe that is all, except a few grabs I took in the grab-bag, and a glass of lemonade. But I have'nt a cent left, and I want to get some strawberries and cream for that boy with the monkey. He is standing right outside the window, looking in with such a wistful face."—"Well, I think you have thrown away enough money," said Flora, "and I shan't encourage you in it. For all you know, that little tramp may be a thief and

A PRECIOUS DISH OF STRAWBERRIES AND CREAM.

Drawn and Engraved for the American Agriculturist.

will run off with the spoon. But I will pay for a plate of cream for yourself if you like it and have had none."—"I don't want it for myself," said Edith, almost crying, "and I think you are very heart-hearted, Florie," at which Flora turned on her heel with her head higher in the air than ever.

"Hey-day, what is all this?" asked a hearty voice close by, and the little flower-girl looked up to see her uncle standing beside her.—"Oh! Uncle John, is that you? I am so glad you have come!"—"That's pleasant news!" but what can I do for you? You don't look as happy as I expected."—"I want some strawberries and cream," said Edith shyly, shaking her curls over her face.—"Is that all? Here, Flora, give us a saucer of your best French cream, and pile it up well with strawberries, mind!" while Edith's eye twinkled with mischief as her sister, with a large spoon, ladled out the cream from a huge freezer behind the table. But Uncle John gazed in amazement when, just as he expected his little niece to pop a big red berry she was sugaring, into her own rosy mouth, she suddenly seized the dish and vanished through the door-way, flinging back a merry laugh and roguish glance at him over her shoulder.

Poor little Giovanni, the organ-grinder, was quite as miserable as he looked; for he had been lured away from his parents and home in sunny Italy, and brought to a strange land by a harsh task-master, who sent him wandering over the country with Chico, his little monkey and only friend, to earn the few pennies that charitable people were willing to pay him. So it was like a glimpse into fairy-land this warm summer evening, when with Chico buttoned up inside his jacket, he wandered near the brilliantly lighted school-house and peeped through the window at the gay scene.—"Ze flowers look like my own country, and ze people zey are all so happy." And a tear rolled softly down the dusky cheek. But there is a flutter of a white dress near by, and a soft voice says: "Poor boy! see, I have brought you some strawberries and cream."

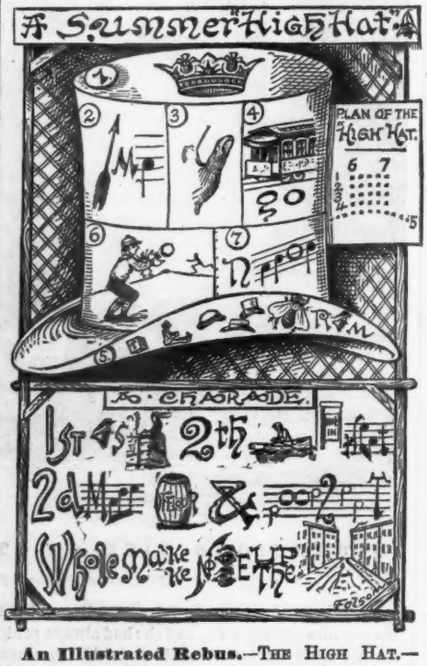
With a start the little Italian turns and meets a pair of pitying grey eyes gazing into his, while two chubby hands push the plate into his, as the girl says: "There, eat it quick before it melts."—"Oh, mees, tank you, tank you," he stammers, while a brown paw darts from beneath his coat and seizes a berry. "Chico and I tanks you a tousand times."—"I hope they will taste good," and the little maid, like a benevolent fairy, slips away.

"But what have you got there, my Chico?" he suddenly asked in Italian, as the monkey after a spoonful of cream took something from his mouth. "There are no stones in these berries."—But whatever it was, the monkey's brown paw closed tightly over it, and he only chattered as he deposited it in the little bag tied about his waist and in which he carried his pennies, and thinking no more of the matter, Giovianni carried his plate and spoon to the door, and lingered for a moment to catch a glimpse of the pretty little lady with the bonny brown curls. But Edith was not to be seen, for on her returning to the hall, after treating her young protegé, she was met by Flora with a frightened face, who drew her into a corner crying. "Oh! Edith, what shall I do! The diamond is gone from Cousin Emily's ring."—"Flora!" It was all Edith could say, and she stood aghast as her sister held up the golden hoop with its disfiguring cavity.—"I am afraid to go home," sobbed the frightened girl, "and it has been the most miserable day I ever spent. I have quarreled with Nellie, almost told a falsehood, and now don't dare to look Cousin Emily in the face, and all on account of this stupid ring, which I wish I had never seen."—"Don't cry," said Edith, and we will have a search for it," and she did hunt carefully under the tables and benches, but all in vain, and it was a very sorrowful pair of sisters that wended their way homeward with Uncle John. So sad indeed was Edith, that she did not see two dark eyes peering at her from behind a tree, though an unobserved listener heard her say: "Oh! dear, I don't think I shall ever be happy until the diamond is found."

It was a long, dreary night to both girls, but Flora tossed and turned restlessly, until the morning light creeped through the shutters, when she fell into a troubled sleep. So it was a very white face she brought to the breakfast table, and Edith's was hardly less anxious.—"I shan't approve of festivals if they rob you of your roses in this way," said Mr. Raymond, observing the pale cheeks, but at that moment a maid entered to say: "A wild-looking boy was in the kitchen, who begged to see the lady with brown curls." Wonderingly Edith obeyed the summons, and in a few moments returned radiant, dragging the little Italian after her and crying joyfully: "Oh! Flora it is found! The dear little monkey found it and this good boy brought it back quite safe."—And in amazement all listened to Giovanni's story, told in broken English.

"I laugh when I find it," said Giovanni, showing his white teeth. "And I tinke now I sell this for much moneys, and Chico and I go home to Italy. But zen I remember ze words of ze young lady, who was so heavenly kind to us, 'I never be happy till ze diamond is found!' So I can't make her sad, and I comes right avay it is day."—"It was a fortunate thing for you, Flora, that it fell into such honest hands," said Mrs. Raymond, with a reproachful look towards her oldest daughter; "for had some of our rough village boys found it, I fear we never should have seen it again," while Edith whispered exultingly: "You see he is not a thief after all."—Flora blushed but made no reply, and busied herself in preparing a bountiful breakfast for Chico and his young master, who were soon revelling in unaccustomed luxuries.

And that was not the end, for Mr. Raymond and Uncle John interested themselves in the young lad, succeeded in freeing him from his cruel master or Padrone; and a month later the whole family went to bid him farewell on the deck of a noble steamer, bound for the land of flowers and maccaroni. Clad in a neat suit and with his sparkling face turned toward home, he looked like a different being from the ragged little waif, who had mournfully ground away at his organ on the street corner; and with hearts and lips overflowing, he bade his benefactors "good-bye," but his last glance and the last wave of Chico's paw was for the sweet little girl, who on that summer evening had come to him like a good fairy, bearing to him a "mine of wealth," buried in strawberries and cream.



An Illustrated Rebus.—THE HIGH HAT.—Make words of the seven pictures on the hat, and place as shown in the small diagram. The words when placed will form the shape of a high hat. No. 5 is made with more than one word. Nos. 6 and 7 are to be read down.

CHARADE.—Read as a rebus and the first, second, and whole word will be found as in printed charades. The answer is an article used in mid-summer.

The Doctor's Talks.

I suppose that all of the little army who competed for the Weed List Prizes are desirous of hearing more about them. To make a connected story, I must go back to September of last year. In that number, on page 419, under the heading

"HOW MANY WEEDS DO YOU KNOW?"

I asked for lists of the common names "of all you could get names for during this month and next." I said: "Please observe, what I want is, the names common in your localities, of the weeds of your place, whether on the farm or growing on the roadsides," but unfortunately failed to say what plants should be regarded as weeds. "What is a weed?" has long been a question. One of the best definitions, given many years ago, is: "A plant out of place." Another is: "Every plant that grows in a field, other than that of which the husbandman sowed the seed, is a weed." Still another is: "A plant which interferes with the cultivation of other plants." None of these definitions meet all cases, but all indicate that plants in the way of cultivated plants are weeds.

A PLANT MAY BE A WEED OR NOT.

It is not its kind or character that makes a plant a weed. Parsnip, carrot and horseradish, are examples. We know how useful all three are in cultivation, yet when allowed to grow wild, they are among our worst weeds. One of the girls was told by her father that "any plant not cultivated is a weed," and other competitors appear to have acted upon that definition, as many lists contain numerous plants not known to grow in cultivated grounds. It does not seem fair to class the white and yellow water lilies as weeds, or to place oaks, magnolias, maples, and other forest trees in this class. Finding that most of the lists contained the names of plants never found in cultivated grounds, but are merely wild plants, before any fair comparison could be made, all plants never known as weeds were stricken from the various lists. This required a careful scrutiny of every list, and consumed a great deal of time.

THE WHOLE NUMBER OF LISTS

was five hundred and eighteen, and a formidable heap they made. The letters were numbered and marked with the date on which they were received. A record was then made, giving number of letter, name of writer, Post-office, State, number of plants, plants, not weeds, and real weeds, with remarks. The lowest number given in any list is ten; there is one of thirteen, and two of fourteen, and quite a number below twenty. The largest list, Miss Pepoon's, of Illinois, has two hundred and eighty names, but as seventy-four of these are not properly weeds, the number of real weeds is not so great as in one other, though a most excellent, carefully-made list. Between the above extremes, the largest number of the lists were those recording between sixty and one hundred names. I offered five prizes in books, and have extended the number to nine. The names of these, who will receive their books long before they see this, are given with all needed information in the table below:

Name.	*Post-offices.*	*State.*	*No of Pl'ts.*	*Not Pl'ts*	*Wds*
Maggie E. Benton,	Livingston,	Mo.,	250	25	225
Mamie Pepoon,	Warren,	Ill.,	280	74	206
*James F. Mason,	Bellaire,	Ohio,	210	34	176
†Annie Pickets,	Gibson,	Ill.,	189	15	174
‡Lucy Peck.	Newtown,	Conn.,	204	39	165
Frank J. Clough,	Tolland,	Conn.,	212	48	164
Marie L. Hoyt,	Turnpike,	N. C.,	157	00	157
William Savage,	Vega,	Iowa.	152	00	152
§William Pickardt,	Portchester,	N.Y.,	162	12	150
‖Elijah Harlan,	Wilsonville,	Iowa,	149	2	147

ONE MORE WORD ABOUT WEED LISTS.

Having a use for the common names for the weeds of the country, I offered prizes for the best lists. My success has been very far beyond my ex-

*Remarkably good for a boy of thirteen.

†Jennie Miles, Eliza and Eva Upp, and Annie Pickets forwarded their lists in the same envelope. Miss Pickets' list is the only one long enough to secure an award.

‡Exceptionally well written.

§I can not allow "old boys"—you claim to be thirty-two—to compete with our boys and girls. Still I thank you for your most excellent and instructive list.

‖Remarkably good.

pectations. While but a few could get a prize, every one who sent a list has done me good service. The shorter lists which did not take a prize, and if for no other reason, you should have nothing to do with them. American boys and girls should be too sensible to think that making a

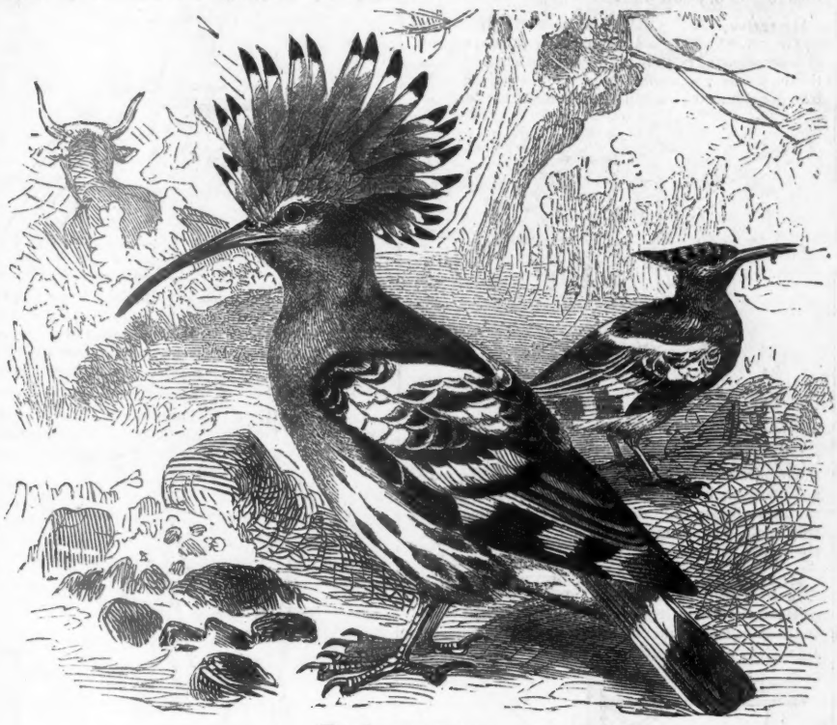


Fig. 1.—THE HOOPOE.

promise to be as useful to me as the longer ones, and every one who has sent one of a kind, small or large, has my most hearty thanks. There are many weeds about which I wish to ask questions, and many of you will receive applications during the season, and I do not doubt that all of you will gladly aid me.

GETTING READY FOR THE FOURTH.

Every youngster knows that there is but one Fourth deserving of being called "The Fourth," and that is the day following the third of July, often called "The day before the Fourth." I assume that every American boy, if he is any sort of a boy, will celebrate the Fourth. Celebrating, with many boys, consists in not doing those things they do on other days, or in doing something not done on other days. The usual result is, very tired boys. As there is of course to be a celebration, the way to make it a good one is given below.

BEGIN TO GET READY NOW.

"It's too early," do you say? I say "not a day too soon." In my youngster days, I had much to do with celebrations of various kinds; excursions, pic-nics, and other affairs which brought many people together. In my experience I found that those celebrations were most successful and enjoyable, for which there had been, what boys sometimes call "a good ready." Besides, there is often as much enjoyment in preparing for a good time as there is in the time itself.

The Fourth of July is our one, only really grand national holiday, and it should be made the most of, not only by every boy and girl in the great *American Agriculturist* family, but by all others in the land. The greatest enjoyment of the day cannot be had unless "ways and means" are well considered, and the plans thought over beforehand.

THE DAY MUST BE CELEBRATED,—BUT HOW?

Boys in cities and villages often begin to save up their money, months in advance, to buy fire-crackers for the Fourth. Not only crackers, but pistols, guns, and even cannon are used to make a noise and disturb people who like quiet. Why fire-crackers, those spiteful little snappers, should be used to celebrate the great American Holiday, I could never discover. They are employed in the religious services of the "Heathen Chinee," and should be left to their proper use. Besides they are dangerous, noise, a smoke and a smell, is the best way of celebrating the anniversary of the greatest day in the world's modern history. By far the best way at least for boys and girls in the country, is to have a neighborhood celebration. Such things do not start themselves. Let some boy ask two or three others to join him, and arrange all the plans. A most sensible celebration is a Fourth of July Pic-nic, to which each one brings his or her own provisions. The first point to decide is, the place for the pic-nic. A grove is best, at any rate let it be a pleasant spot. Having selected the place, invite all the youngsters in the neighborhood, taking care that not one is overlooked. Let it be understood that older people will be welcome. Some of the boys should see to putting the ground in order, moving away the brush and clearing off the rubbish; others should take charge of providing swings; every other preparation should be assigned to some one, and not be left until the last day. The object of the celebration being for every one to have a good time, the exercises should not be long or formal. The most important should be the reading of

THE DECLARATION OF INDEPENDENCE.

This gives the reasons for regarding the day as above all other days, and every boy and girl should read it, or hear it read, at least once a year. Select the reader well beforehand—one who can read distinctly, and he should rehearse his part beforehand.

THE DOCTOR.

Some Interesting Birds.

THE HOOPOE (figure 1), is a native of Africa, and migrates to the continent of Europe in summer, and is occasionally met with in England. It is about as large as the Thrush; its long, slender bill covers a tongue which is forked at the tip and can be greatly extended; this it uses to extract the nectar from flowers. The plumage is very handsome, being variegated with rich brown and purple, black and white. Upon the head is a crest of feathers, which the bird can erect at will; the feathers of this are orange-colored, fading to nearly white with black at the tips. The note of the bird is like *hoop, hoop*, repeated several times in a low, soft tone; it is this note that gives the bird its common name. The male Hoopoe also produces instrumental music; it first draws in air and by tapping the end of its beak down a peculiar sound is given out.

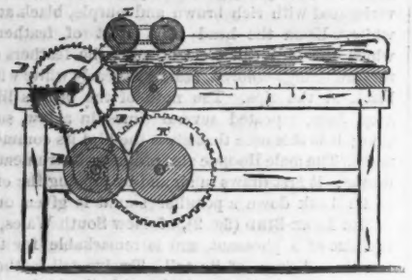
THE LYRE-BIRD (fig. 2), of New South Wales, is the size of a pheasant, and is remarkable for the length and form of its tail. Twelve tail-feathers have long and slender shafts with the barbs very far apart. The two central feathers have a plume on only one side; the outer two are longer and broader than the others, and so curved that the two form a figure like the outline of an ancient lyre. The general colors are brown and black, with reddish spots on the two broad feathers of the tail. It is very shy, hiding among the brush. The Lyre-bird has a pleasing song, and is said to imitate other birds; it is by far the largest song-bird known.

The cocks are quite war-like; one traveller states that, hearing a great noise, he cautiously crawled along to learn the cause, and discovered about one hundred and fifty magnificent Lyre cocks "ranged in order of battle and fighting with indescribable fury." The Lyre-bird is unusually large for a song-bird, and it presents another exception to the usual rule among birds. Songsters are generally very plain birds; they rely upon their voice to make them attractive and do not need showy plumage. This bird is doubly provided, having a rich voice and fine feathers.

Fig. 2.—THE LYRE-BIRD.

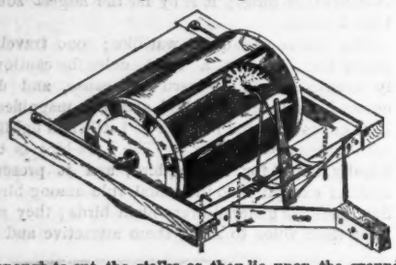
OUR RECORD
OF
Recent Agricultural Inventions.

Straw Cutter.—D. M. Cummings, Enfield, N. H. Feb. 5; No. 293,150. In this cutter the straw, fed between the binding roll *l*, and the flat blade *e*, is cut up by



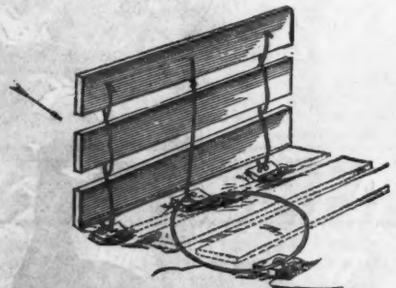
the spiral saw *d*, from which it passes through the spout *p*, to the hard rolls *r*, *r*, which complete its disintegration. The patent covers the combination and gearing of these parts.

Stalk Chopper.—W. H. Mercer, Mercer, S. C. Feb. 5; No. 293,055. The knives of this chopper are attached to a cylinder, which is rigidly fixed to a shaft. Surrounding the knives is a slotted cylinder loosely hung on the shaft, so that when in use, the cutters of the inner cylinder will project through the lower slots, far



enough to cut the stalks as they lie upon the ground. To protect the knives when the machine has to be drawn upon a hard road, sliding plugs are placed on the ends of the shaft, and means are provided for driving the plugs into the end openings of the outer cylinder, so as to prevent its dropping and exposing the cutters.

Flood Fence.—Elizabeth S. Garrett, Downeyville, Ind. Feb. 5; No. 293,003. The engraving shows a single panel of this flood fence, the dotted lines indi-

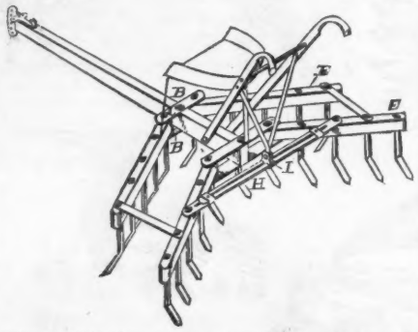


cating the position of the parts when the fence is pressed down by the force of the current. The inventor claims the hinged panel, the anchors, the bent spring, and their fastenings.

Cultivator.—Dominicus Brix, Geneseo, Ill. Feb. 5; No. 293,979. The patented features of this cultivator lie in the means for adjusting the position of the plows. The forward standard or hanger is pivoted at its up-

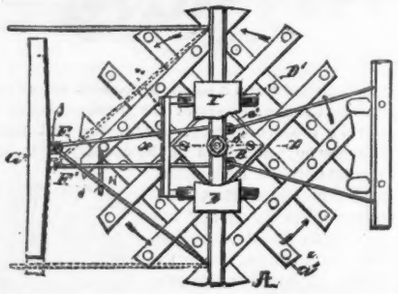
per end to turn on the underside of the plow-beam. The rearmost hanger has a laterally projecting perforated bar upon its upper end, and the plow beam has a lug or bolt which engages the perforations, thus locking the plow in the position desired. By these means the point of the plow may be turned inward or outward at will, changing the width of the furrow when plowing, and bringing the point of the plow nearer to, or farther from the row of plants when cultivating.

Harrow.—E. V. Caldwell, Harpersville, Ind. Feb. 5; No. 292,985. This is a combination harrow, capable of being adjusted to serve the purposes of a harrow, a cultivator, a rake, a pulverizer, a cotton-thinner, etc. The inventor claims the combination of the draft beam, car-



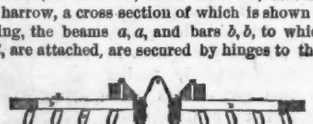
rying two sets of cross-bars, *b*,*b*, upon which are hinged the removable tooth beams *e*,*e*, with the adjusting rod *h*, and the clamp *i*. The teeth of the front beam are forwardly inclined, while those of the rear beam incline backward. The changes required for varying uses, are simple and easily made.

Rotary Harrow.—D. W. Brown, Buckhannon, West Va. Feb. 26; No. 291,113. In the engraving the driver's seat *d*, is partly cut away to expose the pivot of the draft beam, and the connections of the hitch rods *f*,*f*. By varying the adjustment of the guy-rods and hitch-



rods, the harrow may be made to turn in either direction, or to have no revolution. The patent covers the combination of these parts, and the shovel-carrying rear-bar and its connecting rods.

Harrow for Cultivating Listed Corn.—Byron Clark, Greenwood, Neb. Feb. 12; No. 293,227. In this harrow, a cross section of which is shown in the engraving, the beams *a*, *a*, and bars *b*, *b*, to which the teeth *d*, are attached, are secured by hinges to the run-

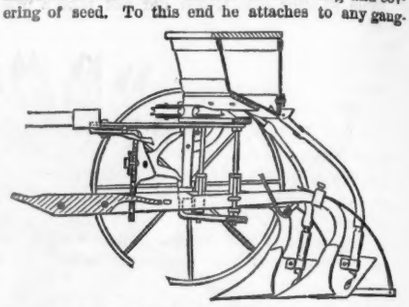


ners *c*, *c*, which are joined sled-wise by the arches *u*. The runners guide the harrow, and protect the corn from clods and earth, while the furrow is being filled by the action of the teeth. The hinged tooth-bars are so connected that the width of the harrow is variable. The inclination of the teeth is also adjustable.

Cultivator.—I. A. Smith, Dexter City, Missouri. Feb. 26; No. 294,091. The object of this invention is to secure the plow standard to the frame in such a way, that when the share strikes a large stone or other obstruction, the upper part of the standard will be automatically disengaged from the beam, and allow the share to swing out of the ground. The displaced share

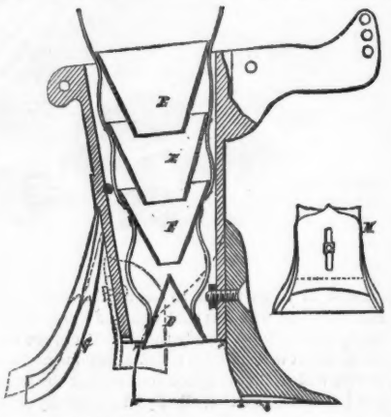
drops into place again when the handle is lifted. To this end the standard is locked in position by a spring-held catch which yields to extra pressure, yet allows the standard to swing into place by its own weight, when the cultivator is lifted from the ground.

Seeding Machine.—A. Shaffer, Cassopolis, Mich. Feb. 26; No. 294,158. The inventor aims to make more certain and uniform the scattering and covering of seed. To this end he attaches to any gang-



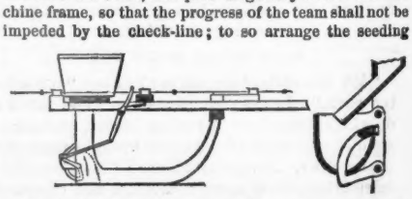
plow, the plows of which are adjustable to cut at a uniform depth, a seeding device which conducts the seed to the furrows, and ensures its regular scattering and covering. An endless carrier running continuously in the same direction, and operated by one of the traction wheels, delivers the seed continuously to the spouts.

Seed Drill.—J. H. Purdy and C. T. Welch, Bellona, N. Y. Feb. 19; No. 293,671. This drill-tooth is thought by the inventors to be an improvement on



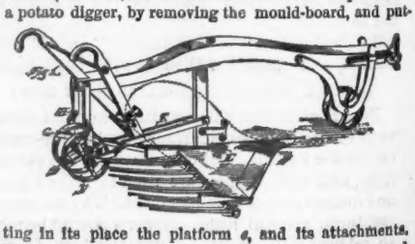
the one patented by them a year ago. They claim as new the series of hollow, inverted, truncated cones *e*, the conical scatterer *d*, suspended as shown in the engraving, the adjustable guard *m*, for preventing too great scattering of the grain during shallow plowing, and the vibrating coverers *g*.

Check-Row Corn-Planter.—E. W. Quincy, Peoria, Ill. Feb. 26; No. 294,369. The inventor's object is threefold,—to arrange the parts of the machine so that the check-row line shall enter the machine at one side of, and clear the team, and pass diagonally across the machine frame, so that the progress of the team shall not be impeded by the check-line; to so arrange the seeding



mechanism that it will be operated in a direct and positive manner by the check-line; and to provide in a pivoted cup-seeder, the means for delivering a regulated quantity of seed at each discharging movement. The engraving shows vertical longitudinal sections of the machine, and the seed-dropper.

Potato Digger.—L. Habeck, Town Lake, Wis. Feb. 5; No. 292,804. The inventor converts a plow into a potato digger, by removing the mould-board, and put-



ting in its place the platform *e*, and its attachments. His patent covers the wheel *l*, with sleeves b^2, braces *h* and *k*, platform *e*, shaking-bar *f*, with its prongs, and the notched rod *g*, in combination with the usual parts of a plow-frame.

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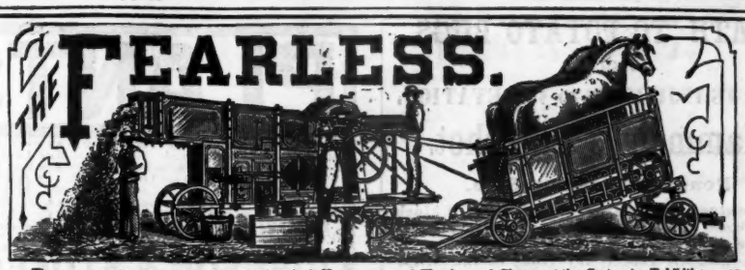

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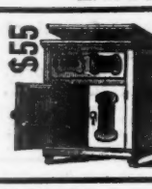

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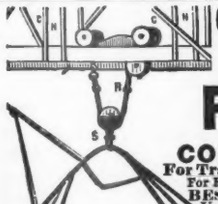

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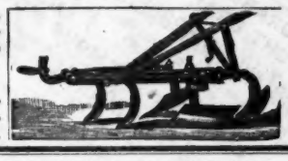

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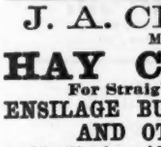

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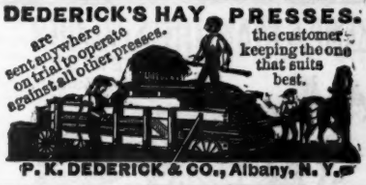

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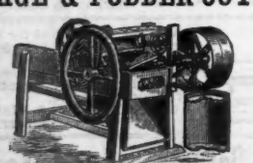

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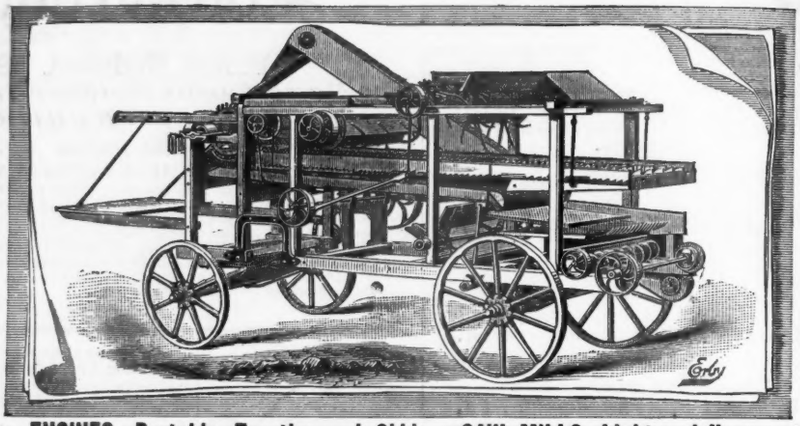

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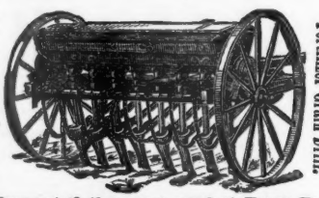

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Milking Tubes Again.

Our attention is kindly called by a subscriber in Wilmington, N. C., to the fact, which gives us no little pain, and which we had entirely forgotten, that several years ago, one of the writers for the *American Agriculturist* had, for a time, such faith in milking tubes, that he recommended their use in this Journal. At that time there was quite a furore about milking in this way. A Scotch farmer brought out the tubes from Scotland, and said that they had been thoroughly tested there. He advertised that he had them in constant use on his own cows. He was known to be an excellent practical farmer, and hundreds of people were deceived. He did indeed use the tubes on one or two of his many cows, and the poor things' udders were swelled and gargeted. The writer experimented with them once, and the very next day one quarter of the cow's udder was inflamed. Such was the well nigh universal result. The writer for the *American Agriculturist* who endorsed the things, soon discontinued their use, but did nothing to repair the injury he had done by their advocacy. It pains us to see that very article, recommending the wretched things, reproduced by a prominent dealer in his catalogue of farm and garden implements. Our readers will please bear in mind, that we now assert the tubes to be dangerous in the extreme, liable to injure the cow permanently, and sure to do so temporarily, unless handled with the utmost care. The reason for this is that, besides the slight local irritation liable to occur from the insertion of the tubes, there is the greatest likelihood of a minute bubble of air passing from the tube into the udder. Air in the udder is a foreign body, and there appears to be no way of getting rid of it, except perhaps by means of an attack of the garget. When this comes, the chances for saving the inflamed quarter are slim. Sometimes it becomes necessary to draw the milk from a teat, when the teat is so tender and sore that it cannot be pressed by the hand in the usual way. In such a case, we have found the best tube we could use to be a crow-quill. The quills of a crow's wing are small, sound and firm, and usually long enough, but in case the one selected seems too short (not less than an inch and a half long), the best plan is to cut it off a little longer, cutting into the shaft of the feather, and then carefully cleaning this out, so as to make a continuation of the tube. The pointed end of the quill is to be inserted in the teat, and this must not be cut off, but softened by moistening, and then opened by a pin or sharpened match. The end of the tube made in this way is somewhat contracted, and is not so likely to let any air into the udder. Still, on removing the quill or tube (if a metal tube be used), the wet finger should be placed upon the end, so as to close it entirely, and then the tube gradually withdrawn.

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N. B.—Questions and queries of our regular subscribers only are answered.

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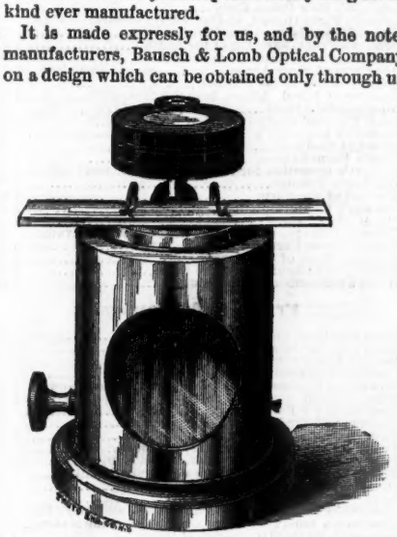

We will present one of these Microscopes, delivered free, with the *American Agriculturist*, postpaid, to any new subscriber for 1884, for two dollars. Any person who is already a subscriber to the *American Agriculturist*, can have one of these Microscopes delivered for one dollar and twenty-five cents.

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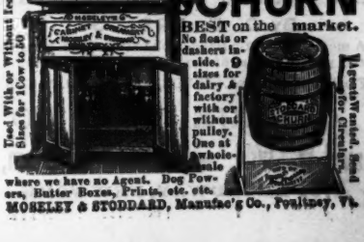

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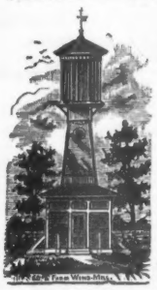

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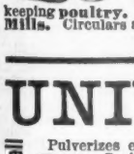

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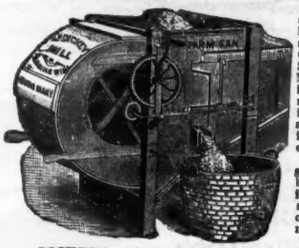

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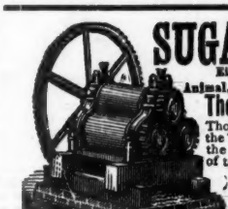

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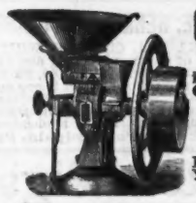

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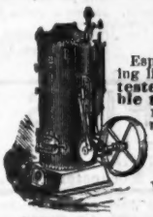

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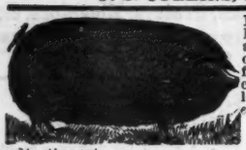

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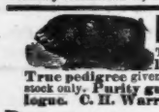

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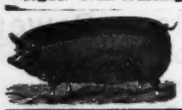

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If you pry with your knife, this one will not suit you. Blades are thin, and made for keen, clean cutting, and tempered as carefully as a fine razor. Price $1, post-paid. Farmers' Extra Strong 2-blade, 75c.; medium, 2-blade, 50c.; 1-blade, 25c.; HUNTING KNIFE, $1.; GENTS' 3-blade, $1.; BUTCHER KNIFE, 6-inch blade, 50 cents. Safe arrival guaranteed for 10c. extra.
48-page list sent free. Also, "How to use a Razor."
MAHER & GROSH,
Cutlers,
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SEDGWICK STEEL WIRE FENCE.

Is the only general purpose Wire Fence in use, being a **Strong Net-Work without Barbs.** It will turn dogs, pigs, sheep and poultry, as well as the most vicious stock, without injury to either fence or stock. It is just the fence for farms, gardens, stock ranges and railroads, and very neat for lawns, parks, school lots and cemeteries. Covered with rust-proof paint (or galvanized) it will last a life-time. It is **Superior to Boards or Barbed Wire** in every respect. We ask for it a fair trial, knowing it will wear itself into favor. The **Sedgwick Gates,** made of wrought iron pipe and steel wire, defy all competition in neatness, strength and durability. We also make the best and cheapest **All Iron Automatic or Self-Opening Gate,** also **Cheapest and Neatest all Iron Fence. Best Wire Stretcher and Post Auger. Also Manufacturer Russell's excellent Wind Engines for pumping water,** or geared engines for grinding and other light work. For prices and particulars ask hardware dealers, or address, mentioning paper,
SEDGWICK BROS. Mf'rs., Richmond, Indiana.

IF you use an Incubator, send three one-cent stamps for a copy of HALSTED'S

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Worth ten-fold its cost for future reference. Address
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Took all the high prizes in New England and New York City, 1883 and 1884. *Eggs and fowls for sale.* Send for circular. **A. C. HAWKINS, Lancaster, Mass.**

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EGGS Can spare a few more Settings from my superior, prize winning Brown Leghorns.
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Send for prices. Send 25 1-cent stamps and get Book of instructions on Bee-Keeping to
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$2000 **A Year** keeping **Bees, and no stings.** Catalogue and particulars sent free. Send now, don't wait. K. P. KIDDER, BURLINGTON, VT.

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FERRACUTE MACHINE CO. BRIDGETON, N.J.

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Rifles, Shot Guns, Revolvers, sent c. o. d. for examination.
Address GREAT WESTERN GUN WORKS, Pittsburgh, Pa.

ELEGANT pack of **50** Floral Beauties, Mottoes, Verses, &c., name on, 10c. 10 pks. & Silver Napkin Ring or Ag'ts Sample Book, $1.00. TODD & Co., Clintonville, Conn.

PHONOGRAPHY OR PHONETIC SHORT-HAND. Catalogue of works by Benn Pitman, with alphabet and illustrations for beginners sent on application. Address
Phonographic Institute, Cincinnati, Ohio.

We will send you a watch or a chain **BY MAIL OR EXPRESS,** C. O. D., to be examined before paying any money and if not satisfactory, returned at our expense. We manufacture all our watches and save you 30 per cent. Catalogue of 250 styles free.
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FOR

Horse Diseases

Going's Worm Destroyer.—Sure Relief from Worms or Bots.

Going's Tonic Powder.—The Best Preparation Known for Improving the Horse's Condition, Purifying the Blood, and Imparting to its Coat a Glossy, Shining Appearance.

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These remedies are each put up in tin boxes, and will keep for an indefinite period. They will be sent by mail, free of charge, on receipt of $1 per package. Circulars with full directions enclosed. Address,
PROF. J. A. GOING, P. O. Box 938, New York City.

Furniture and Picture Auctions,

are very frequently swindles. The sale of the effects of "a family breaking up house-keeping," often continues for months. The stranger in the city should avoid all such auctions. If he enters the place, he will find a gang of confederates ready to aid the auctioneer in making it appear that he has bid a high price for their worthless stuff. One who is entrapped in such a place, should at once go, if he has to fight his way out, to the nearest police station and enter his complaint.

Stock-Raising in Texas.

The ranchero who charged a dollar for what he called a "general description" of his spotted ponies, which did not describe anything, now proposes to teach "Stock Raising in Texas." Those who wish to know "terms and contract of just what we will do," can ascertain by sending, as before, one dollar. If young men wish to go to Texas, we advise them not to commit themselves to this man in advance, unless he gives satisfactory reference. Unlike the regular Texan, this recent comer from Ohio is rather sharp after a dollar. Will some one who has been at this ranch give us his experience?

Free Recipes at Rochester.

New York and Brooklyn have heretofore been regarded as the headquarters of those who work the "free recipe" swindle, but now, W. A. Noyes, of Rochester, N. Y., has a formula from "an East India Missionary." He, like all the rest, "felt it his duty to make it known to his suffering fellows." J. Dwyer, Knox Co., Mo., writes us on behalf of a neighbor, who is taking the stuff sent him, and does not improve, asking what we know of the recipe chap. We know just what you know. He advertised to send the recipe free of charge. The recipe, when it came, was of no use, as the stuff was prescribed under names that were unknown to druggists. Noyes knew this, and proposed to furnish the stuff himself. Your neighbor paid five dollars for some kind of roots—no one knows what. There was an intentional fraud at the outset—is it likely that the rest of the transaction will be honest?

Martin Meyer and his Lottery.

It is a long time since we heard of Martin Meyer, Jun., and his "Lottery of the City of Hamburg," (Germany), but he now is annoying our subscribers in Iowa, and other Western States, with his very voluminous circulars. We are told that this lottery was established more than a century ago. "Of little importance in the beginning, it has insensibly grown year after year, to such magnitude that its tickets are spread all over the civilisated world." It must be a comfort to those who draw blanks, to know that their tickets all bear the arms of the "Free City of Hamburg." Meyer sends a "Promissory note," in which he agrees upon the receipt of the money, to send the tickets—which is very kind of him. We believe in the encouragement of domestic manufacturers, and even in such nuisances as lotteries, do not think that the foreign product should have any advantages over the home-made. Under the working of our present laws, the City of Hamburg can carry on the lottery business among us, while the City of New Orleans is shut out of the mails. Still the law is a good one, until a better can be provided.

The Various "Graphs."

There is much that seems dubious among the "Arto-" "Color-" "Pearlo-" and various other "graph" operators, who offer great inducements to persons, especially ladies, to color photo-graphs for them. They each warn people against all the others, and as we have had complaints of all of them, we last month, in order to get at the true history of the matter, asked for the experience of "our lady readers." The very first response came from a gentleman, a clergyman in Rhode Island, who for obvious reasons does not wish his name published. Wishing to do something to help out his meagre salary, he replied to the advertisement of one of the Philadelphia concerns, sending a dollar. He says: "I received circulars giving instructions how to color pictures, but so blind, that no one could hope to succeed. The real object is, not to sell paints and materials, but to get a dollar for a 'Book of Instructions,' and the same is utterly worthless." He adds: "I read it over three or four times, to try to make sense or reason of it, and failing, gave it up. I am quite satisfied that no one could color the pictures so as to be accepted and paid for by the 'Co.'" Next!

"The Greatest Mining Enterprise in the World."

The above is the unassuming title that modestly heads a prospectus before us. It goes on thus: "See what great veins of gold, silver, copper, and lead the Atlantic-Pacific Tunnel is being steadily driven into," and all this in fancy type and displayed lines. What follows is rich reading. This Tunnel, the precise location of which is carefully not given, goes right square through the Rocky Mountains and taps below those veins which miners have been working with so much labor from above. Here there is nothing to do but shovel out the ore—and such ore! Here's richness! The reading of the accounts of the few fortunate persons who have visited this Tunnel is fascinating. When the mine gets fairly at work, the out-put is expected to be one hundred thousand dollars per day! We can only say, that while three thousand five hundred and seventy-eight persons hold shares, only about half are taken. The rest may be purchased of—but these are not advertising columns. Such schemes as this can only affect those fond of speculation, and who can usually stand a loss without being distressed. But how can there be loss with one hundred thousand dollars a day?

Wonderful Fruit Trees for Farmers.

A Subscriber, Washington, Kansas, writes us that tree agents are canvassing his county. They represent, as they say, great nurseries, are on a salary, and therefore bound to go according to instructions, and always do right. They claim the nursery company has many millions in the business, and cannot afford to mislead, etc. These agents have fruit in alcohol, elegantly colored plates, and photographs of wonderful plants. They warrant apple trees to produce fruit in two years, and show how this can be, as follows: "They bud on Russian crab stock two years old, with buds from bearing trees. The crab produces fruit at three years, and if the buds are from bearing trees, they must produce fruit in two years after budding." The agents also state that the peach is budded upon plum stock, and the trees are never effected with borers or "blight," and fruit every year. By cutting back two-thirds of the growth every year, and leaving only buds on the underside, a beautiful drooping top may be formed. This "weeping" condition of the peach is shown by a photograph of a tree grown at the nurseries. These men are taking a great many orders for these wonderful trees at fabulous prices. Thus the sharks prey on the honest farmers in Kansas.

How many times have we cautioned farmers and others not to invest largely in new and remarkable fruit trees, on the strength of smooth talk, and highly colored pictures.

Newspapers with an Annex.

It is coming in fashion for journals and magazines of various kinds to have an attachment or annex of some kind. This at one time took the form of a lottery, but in spite of the fact that it was called a "Distribution," or by some other name, it brought the publishers to grief when they were deprived of the use of the mails. As there are difficulties in the way of running an annex in the form of a lottery, there are indications that it will in future assume the form of

A BANK OR A LOAN OFFICE.

A few months ago, we mentioned the scheme of a Cincinnati publisher, who proposed to set aside a share of its receipts, to form a fund to be distributed in loans among the subscribers to the periodical. The Cincinnati publisher is not alone in having a banking attachment to his publication. A competitor has appeared in the

"INTERIOR DOLLAR MAGAZINE."

Like the prospectus of the other, the circular of this shows by plain figures, that but one thing is needed to make publishing very profitable to the publishers, and allow them to aid their subscribers by making them loans in amounts of one hundred to five hundred dollars—that one thing is a subscription list of some hundreds of thousands of subscribers. This scheme, which is set forth by the "Michigan Loan and Publishing Co.," with its headquarters at Charlotte, Mich., reads so much like that from Cincinnati, and uses illustrations and figures so nearly like those in the other, as to suggest that both had one origin. This more recent affair has the advantage over the older one, as it offers its loans at three per cent interest instead of four. In looking through this prospectus, we have not been able to learn how often the "Interior Dollar Magazine" is published, what is its scope, or who are its writers. Indeed, there is an entire absence of names in the pamphlet, which shows wonderful modesty on the part of those who propose to revolutionize the publishing business.

Mr. Hart's Experience with "Magnetic Appliances."

Mr. S. N. Hart, of Southington, Conn., writes us, that in December last he received from a concern in Boston, Mass., "a belt and insoles. Their circular says: 'Bear in mind, we guarantee a cure, and will cheerfully refund the amount paid when they fail doing all that is claimed after reasonable trial.' On Nov. 13th, they wrote me: 'Yes, we will guarantee a cure, or take pleasure in refunding the money.' On Nov. 19th they wrote me: 'We guarantee to effect a cure, or refund the money.' On Dec. 4th I commenced wearing the belt and insoles, and used them faithfully for ninety-nine days. Neither my wife nor myself were able to see the least advantage from their use, and on March 5th I wrote them to refund the money (ten dollars). March 12th I mailed them another letter, stating that I should send a sight draft. I returned the belt and insoles on March 12th, and can truthfully say that I have had no reason since to think that they ever did me a cent's worth of good. The draft was returned, marked 'refused.'"—We have examined numerous so-called "Magnetic," "Galvanic," and "Electro-magnetic" appliances, and though some make a great display of "hardware," we have never yet seen one that could produce any electric, galvanic, or electro-magnetic curative influence. Any form of electricity to produce any effect, must pass through the diseased portion of the body and act on the nerves. None of those we have seen do anything of the kind. The appliances we have seen consist of

DISKS OF COPPER AND ZINC, OR OTHER METALS,

riveted to Indian rubber cloth. That they have sometimes been useful, we do not doubt, as a strip of rubber cloth applied closely to the skin is often very beneficial in rheumatic and other affections, and probably none the less so, if it has some metal disks attached. Very likely the alleged curative powers claimed for the various "appliances," is due to the cloth and not to the metals attached to it, which may serve as ornaments, and aid the imagination of the patient, as they look "scientific." As to our correspondent's failure to get his money back, what can he expect from one who will propose the impossible—"guarantee to effect a cure"?

We commend Mr. Hart's example to others. He has a charge to make, and makes it boldly, without adding, "please do not use my name." We can understand why, in many cases, persons should not wish to have their names appear, but in instances like the above, where there is a direct failure to comply with an agreement, and there is nothing of a delicate nature involved, correspondents should be willing that their names be given. A warning substantiated by a name and address, has far more influence than when initials only are published. Still, where our correspondents indicate a desire to avoid publicity, their wishes are respected.

Fraud at the Breakfast Table.

To the average American, coffee is as essential to a good breakfast, as is tea to the Englishman. The frauds practised by the makers of ground coffee, are many and well known. These may be readily avoided by the purchase of coffee that is not ground. It has been supposed that one who purchased the raw bean, and roasted and ground it himself, would have pure coffee. While this course avoids one set of adulterations, those which are only possible with ground coffee, it may be but a change of evils. While raw coffee is free from adulteration in the proper sense of the term—the adding of a cheaper article to reduce its cost to the seller, the purchaser may fall upon what is still worse—poisoned raw coffee. It has recently been discovered by the officers of the Board of Health of New York City, that Maracaibo, Rio, and other cheap coffees, are manipulated and colored in their unroasted state, to make them resemble in appearance and color, the "Old Government Java," and that in the process there are used various coloring materials which are of a poisonous nature, and which one would not, even in small quantities, willingly take into his system. Among the coloring matters are some, which, like umber, Venetian red, lamp-black, soapstone, etc., are no more harmful than the same quantity of any other kind of dirt. On the other hand, there are employed compounds of arsenic and lead, which one would not care to take with his coffee in even minute quantities, besides the prussiate of potash and other chemicals not usually regarded as essential to a good breakfast. The cheap coffees are green, and the surface has a dull appearance, while Java coffee has a yellow color, and the surface of the bean is

smooth and polished. The articles we have mentioned are used to change the green of cheap coffees to yellow. Sprinkling the coffee with gum-water, adding powdered soapstone, and various coloring materials, and placing it in hot revolving iron cylinders, the beans rub against one another, until they acquire the desired color and polish. The coffee brokers assert that more than half the retail grocers sell cheap coffee that has been colored to imitate Java. There are large establishments for coloring coffee near New York, but they claim that their processes are harmless. They however do admit that that there are some wicked men in the same business in Holland, and it may have been their coffees that were examined by the Board of Health.

HOW TO DETECT COLORED COFFEE.

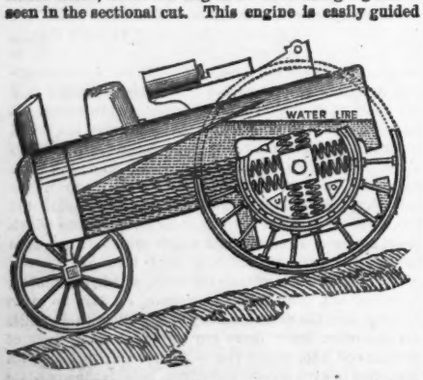
First-class retail grocers can procure their stock from importers, and they are in no danger of being served with the colored stuff; but it is different with the average dealers all over the country. Soaking the suspected coffee-grains in water, frequently stirring, or shaking them if in a bottle, then carefully drying them and comparing them with a sample not so treated, will show by a difference in color if they have been tampered with. Nearly all the coloring materials are insoluble in water, and if the water in which the sample of coffee has been soaked is allowed to stand in a wine glass, the coloring matter will settle as a fine powder at the bottom.

New Farm Implements and Appliances.

Print Butter.—There is an end to oleomargarine in this State, thanks to the Legislature and the Governor, who have enacted a bill forbidding the manufacture of the article. Now our advice to our farmer friends is to make the best butter, put it up in

neat packages with their own particular stamp, plainly impressed on each package or lump. One has but to go about New York, to see what prices butter stamped "Houghton" or "Echo" Farm commands. It is in the power of nearly all butter manufacturers, to have a brand and a reputation of their own. Perhaps the best butter stamp is the one manufactured by A. H. Reid, of Philadelphia, Penn.

A Boiler for Steep Grades.—One of the greatest objection to traction engines has been the danger of explosion while running up or down steep grades. The "Ajax" Traction Engine, manufactured by A. B. Farquhar, York, Pa., overcomes this difficulty in a manner shown in the engraving below. A plate of sheet iron is placed over the front end of the boiler tubes, and extends backward and upward. The position of the water, when the engine is descending a grade is seen in the sectional cut. This engine is easily guided



by a patented arrangement, in which the steam does all the hard work.

American Rubber Paint, for several years advertised in our columns, has received general commendation from our readers. Because we have received only commendation and no complaints, we urge our readers to send to the manufacturer, Edmund Blunt, 115 Maiden Lane, New York, for samples and full descriptions.

About Threshing Machines.—There are some trials of agricultural implements that amount to very little, as the apparent superiority of many machines depends more upon the skill of the operator, or the use of horses accustomed to the work, than to any excellence of the machine itself. With a thresher the case is different; here it is the structure of the machine that allows more or less work to be done with the same power. On this account, the victories won at the various trials by the Fearless Thresher, made by Minard Harder, Cobleskill, N. Y., may be accepted as evidence of its superiority, which is further confirmed by the many individuals who have them in use.

The Carpenter's Steel Square and its Uses.—Few mechanics who have used the square all their lives, are aware of how much may be done with it, or to the extent to which it may take the place of more expensive instruments. The author, Fred. T. Hodgson, has brought together in the present work, the various rules and formulas for laying out, by the use of the square, the various angles, bevels, etc., that builders often have need to construct, and to form octagons, polygons, to lay out stairs, and describe circles and ellipses by its aid. The fact that the present new and enlarged edition was called for within two years from the time of the original publication, shows that the work was appreciated by the mechanics of the country, for whose benefit it was intended; they will find the present edition greatly enlarged and even still more valuable. Price, $1.00, post-paid.

Quinby's New Bee-Keeping.—A Complete Guide to Successful Bee Culture, by L. C. ROOT, Apiarian, New York. The Orange Judd Company.

The late A. M. Quinby was long regarded as the highest authority in all matters relating to the apiary. While exceedingly cautious with regard to new methods and appliances, he was progressive, and ready to accept whatever was found to be a real improvement, but a sturdy foe to every form of all pretence, charlatanism, and useless patents. His advice was eagerly sought at various Bee-keeper's Conventions, and his work was for many years the standard authority. So averse was he to all secrecy in the methods of the Apiary, that he called his work, when first published: "The Mysteries of Bee-keeping Explained," though this title was modified in after editions to "Quinby's New Bee-keeping." After the death of Mr. Quinby, the work was re-written by his business associate and son-in-law, Mr. L. C. Root, who embodied the later improvements of Mr. Quinby, as well as his own, and in successive editions, including the present, has kept the work up to the requirements of progressive apiculture. While the work as it now stands is essentially Mr. Root's, he modestly appears as associate author, and gives prominence to the name of one who did so much to bring bee-keeping to its present prosperous condition. The present edition, which contains added matter and new illustrations, is now in press. Price, post-paid, $1.50.

Catalogues Acknowledged.

The catalogues which did not come to hand in time for last month, are given below, and with these we discontinue the publication of the lists until fall. We suggest to our friends that they send their autumn catalogues as soon as they are ready.

NURSERYMEN AND FLORISTS.

J. L. DILLON, Bloomsburg, Pa.—A full collection of green-house plants and small fruits, and makes a specialty of roses.

E. M. FULLER, Bismarck, Dakota.—Green-house and other plants, flower and vegetable seeds, etc. This excellent catalogue shows in a striking manner our wonderful westward progress.

T. S. HUBBARD, Fredonia, N. Y.—Grapes and small fruits. An instructive illustrated catalogue.

IMPLEMENTS, MACHINERY, & MISCELLANEOUS.

BAUGH & SONS, No. 20 South Delaware Ave., Phila., Penn.—Phosphates and other fertilizers, formulas for fertilizers, and the chemicals used in compounding them.

BOOMER & BOSCHERT, Syracuse, N. Y., illustrate the various styles of their powerful press for cider, wine, etc. Also the various accessories used with the press.

BROCKNER & EVANS, No. 422 West St., New York City. Wire netting, and various wire and other appliances for poultry houses and yards, dog kennels, pigeon houses, etc. Also tasteful garden fences, arbors, and other garden structures.

WM. L. BOYER & BRO., Germantown Ave. & Diamond St., Philadelphia.—Union Horse-power Threshers and Cleaners. Farm Grist Mills and other farm machines.

A. B. COHU & Co., No. 197 Water St., New York City.—A very large and finely illustrated catalogue of farm machinery and implements, including those required by planters in tropical countries. The latest improved forms are distinguished by the trade-mark, "A. B. C." Contains everything, from a steam-engine to a garden trowel, besides farm and garden seeds.

J. H. JOHNSTON, Great Western Gun Works, Pittsburgh, Pa.—An illustrated list of rifles, shot-guns, revolvers, and a great variety of accessory implements, fishing tackle, etc.

FRANK L. MOORE, Poughkeepsie, N. Y.—Illustrates and describes the Nectar Fountain for Poultry.

GEO. L. SQUIER, Buffalo, N. Y.—Describes mills, evaporators, and all other machines for working up sorghum in the "Northern Sugar Cane Manual."

FOREIGN CATALOGUES.

JOSEPH MAYO, Drury, Auckland, New Zealand. A descriptive fruit list. A very large share of the apples are of our own varieties, while the pears are nearly all of French origin.

1867 1884

Hatch & Foote, Bankers. 12 Wall St. New York.

Buy and Sell all issues of U. S. Bonds; execute orders in Stocks and Bonds for Cash, and on a Margin; Interest allowed on Deposits. Desirable Investment Securities on hand, a list of which we furnish on application. Personal attention given to correspondence which we invite.

SILKS FOR CRAZY PATCHWORK in 50c. or $1.00 packages. Elegant varieties. Our 20 cent package of best Embroidery Silk, assorted colors, free with every $1.00 order. YALE SILK WORKS, New Haven, Ct.

50 Large, New, Embossed border Chromo Cards, all gold, silver, motto and hand, name on, 10c., 13 pks. $1. Agts' latest samples, 10 cts. L. JONES & CO., Nassau, N. Y.

50 New Style Chromos, EVERY CARD EMBOSSED. Moss Rose, Bird Mottoes, Hand Mottoes, Golden Beauties, &c., name on, 10c. Ætna Ptg. Co., Northford, Ct.

PRESSES, TYPE, CHROMO CARDS, Scrap Pictures, &c. Send for price lists. E. C. DUNN & CO., 2106 Orkney St., Philadelphia, Pa.

40 (1884) CHROMO CARDS, no 2 alike, with name, 10c., 13 pks., $1. GEO. I. REED & CO., Nassau, N. Y.

SOLID GOLD THIS SOLID GOLD BAND RING, warranted Solid Gold or money refunded, in an elegant velvet-lined casket, A case of samples of our Beautiful Cards, and our new Illustrated Premium List with agt's' terms, &c., all sent post-paid for 45c., 3 for $1.25. Offer made to secure new agents for 1884. We will print your name in new type on 50 Beauties, 50 all new Chromos, 10c, 11 packs for $1.00, and the above ring FREE to sender of club. New Sample Book 25c. post-paid. CAPITOL CARD CO., HARTFORD, CONN.

50 Embossed Chromo Cards, bouquets of flowers, hand holding bouquet, Ancient and Modern Views, &c., (every card embossed) something just out only 10 cents. As an inducement for you to get up a club we will send you a Handsome Four Bladed Pearl Handle Knife free with a $1.00 order. HUB CARD CO., BOSTON, MASS.

60 Lovely Cards Choice Chromos, your name in pretty type, post-paid, 10c. 25 fine gold edge cards, 10c. Hidden name cards, 12 for 20c. 500 other styles. Big pay to agents. Send 6c. for terms and samples to canvass with. HOLLY CARD WORKS, Meriden, Conn.

New style fruit or pocket knife, free with a 50c. order.

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